

# Journal of Multidisciplinary Research

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# Journal of Multidisciplinary Research

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## Mission Statement

The mission of the [Journal of Multidisciplinary Research](#) is to promote excellence by providing a venue for academics, students, and practitioners to publish current and significant empirical and conceptual research in the arts; humanities; applied, natural, and social sciences; and other areas that tests, extends, or builds theory.

# Journal of Multidisciplinary Research

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## Editorial

Pelé once said, “Success is no accident. It is hard work, perseverance, learning, sacrifice and most of all, love of what you are doing.” As we look back at the *Journal of Multidisciplinary Research*’s (JMR) impressive progress, the saying “progress is mutual” is evident. In the past 15 years, the JMR published first-rate research by 850 authors and contributors representing 148 universities and 26 countries. We featured about 190 thought-provoking articles, over 4,500 pages, 49 interviews with leaders and change makers, 67 book reviews, and 32 student articles. As I said previously, here at the JMR, we do not just publish research articles, we record history for academia, scholars, and the world at large.

This Volume 15, Number 2, edition of the JMR features interesting and stimulating research articles, student articles, book reviews, and an inspiring interview with a brilliant change-maker. A timely and thought-provoking article from Israel’s Zefat Academic College discusses the compulsory licensing mechanism set forth by the World Trade Organization (WTO) and the wholesale waiver the WTO issued during the COVID-19 pandemic, aimed at reducing vaccine prices. Collaborative research from University of Southern California, Texas Woman’s University, and Texas Christian University study the effects of short-term goal setting on enjoyment and session rating of perceived exertion during a rowing exercise task.

An interesting article from the University of Johannesburg in South Africa discusses the harmful beneficence of psychological career assessment tools for social equity. A University of the Philippines researcher recommends that when making decisions, ethical approaches such as Christian ethics should be in place of, or in combination with, utilitarianism. Researchers at Neumann University in the U.S. discuss what kind of experiences provide opportunities for constructing knowledge about a brand-new concept. Researchers from Bezmiâlem Vakif University and Hacettepe University in Turkey examine the relationships among societies’ development level, happiness level, and innovation capacity. In our “Life Forward” section, we feature an inspiring interview with Shay Mowlem, the Chief Marketing and Strategy Officer at NinjaOne, a cloud-native leading IT management company.

In our “Student Corner,” we also feature an interesting student article from both Thomas More University and St. Thomas University in the U.S. The article evaluates quality improvement tools and blood platelet compliance processes. In addition, we review the books *Uncertainty* by Jasanoff, *Advances and Lessons in Sports* by Fernández-Calienes et al., and *Unearthed: A Lost Actress, a Forbidden Book, and a Search for Life in the Shadow of the Holocaust* by Frank.

As we approach the end of 2023, we would like to thank all our contributors, collaborators, and stakeholders. I wish you Merry Christmas, Happy Chanukah, and a happy, productive, and successful 2024!

Always forward,

Hagai Gringarten, Ph.D.  
*Publisher & Editor-in-Chief*



“London Bridge by Day”  
2023

Photography by Scott E. Gillig.

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## **The Money or Your Life?**

# **Enhancing Poor States' Accessibility to Medicines and Vaccines in Global Pandemics**

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### **Abstract**

This article revisits the compulsory licensing mechanism set forth by Articles 31-31bis of the World Trade Organization (WTO) Trade-Related Aspects of Intellectual Property Rights (TRIPs) Agreement and the wholesale waiver the WTO issued during the COVID-19 pandemic, aimed at reducing vaccine prices to make them available to poor countries. The article argues that amendment of these mechanisms in line with the proposals set forth by the current literature may not be sufficient and complementary, supporting steps may be necessary to ensure accessibility of poor countries to medicines or vaccines in future pandemics, particularly in cases of their limited production capacity, in the short and medium run.

*Keywords:* intellectual property, pandemic, pharmaceuticals, TRIPs, COVID-19.

### **Introduction**

Patents form a legal instrument, ensuring the privileged right of inventors, researchers, and investors to enjoy the fruits of innovations. National and international law protects patents and other intellectual property rights (IPR). Patent registration is national. Its registration effectuates the respective national law's protection, giving the patent holder some kind of a 'monopoly' right to produce or apply the invention for a given period, usually 20 years. During this time, the patent holder charges relatively high prices for any use of the patent, to cover the investment in the patent development and the patent holder's profit. International treaties<sup>1</sup> and the World Intellectual Property Rights Organization (WIPO) act as an international framework for the protection of intellectual property rights, including patents. Simultaneously, it affects the substance of relevant national laws and forms a global supportive envelope for their national implementation and

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<sup>1</sup> See a list at WIPO website: <https://www.wipo.int/treaties/en/>

enforcement. However, adherence of states to these international treaties is voluntary. To ensure the subjection of most countries to a minimum set of rules protecting intellectual property rights, the 164 member states of the World Trade Organization (WTO) finalized the Trade-Related Aspects of Intellectual Property Rights (TRIPs) agreement (see description in Watal, 2002; Matthews, 2002; WTO, 2023), after tough negotiations between developed and developing countries (Capling, 2004, 184–186).

The combination of national and international rules aims to encourage R&D and innovation by ensuring their profitability. However, it implies that patent or IPR-based goods, particularly medicines, and vaccines, are expensive and thus less accessible, or inaccessible, to poor countries.

In times of global pandemics such as COVID-19, this reality imposes particular moral and health dilemmas. The moral dilemma focuses on the extent to which the right to life should depend on the economic status of human beings, or of the states in which they live. Skeptics or cynics may contend that this is a common, daily insolvable dilemma even in the richest countries. However, even such skeptics and cynics address the health dilemma more seriously: as the COVID-19 pandemic illustrated, in a global world nobody is safe until everybody is safe. Namely, the inaccessibility of poor countries' populations to medicines or vaccines in cases of global pandemics may endanger even the populations of rich countries which can afford these medicines or vaccines.

Developing countries have been struggling for equitable access to essential medicines since the beginning of decolonization. (Bouderhem, 2022, 178). This article revisits the current WTO legal mechanisms devised to balance that right with inventors' and investors' rights for IPR protection, assessing their shortcomings in light of post-COVID-19 insights and literature. The first section analyzes the compulsory licensing mechanism of Articles 31–31bis of the TRIPs agreement. The second section analyzes the wholesale waiver the WTO initiated during the COVID-19 pandemic and the potential use of the security exception of Article 73(b)(iii) TRIPs. The third section discusses the limited capability of the existing legal mechanisms to ensure poor countries' accessibility to pharmaceuticals in global pandemics, in cases of insufficient production capacity of relevant vaccines or medicines, in the short and medium run.

## **Section 1: The Compulsory Licensing Case-by-Case Mechanism of TRIPs Articles 31-31bis**

Before the TRIPs agreement,

many developing countries established regulatory regimes aimed at ensuring affordability and equitable access to medicines. This was typically achieved through price control mechanisms, public subsidies, and/or the promotion of generic competition. (Capling, 2004, 190)

By adhering to the TRIPs agreement, these countries had to undertake legal obligations to terminate these affordability and equitable access practices to a great extent (Nain, 2006), to protect patent holders' rights. For developing countries, that implied decreased accessibility and affordability of pharmaceuticals.<sup>2</sup> And so, they necessarily demanded a safety valve for

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<sup>2</sup> Global shocks (including global pandemics) may escalate the economic situation of developing countries and the least developed countries (LDCs) engaging in trade liberalization (Winters, 2015). Such crises may decrease their ability to pay for pharmaceuticals even more than usual.

emergencies. Article 31 of the TRIPs agreement directly sought to address this demand.

### *Article 31 Mechanism*

Article 31(b) of the TRIPs allows the governments of the WTO developing and least developed<sup>3</sup> member states to provide for compulsory licensing without the patent owner's permission "in the case of a national emergency or other circumstances of extreme urgency or cases of public non-commercial use." Such compulsory licensing, allowing for the production of the necessary pharmaceuticals by other producers than the patent holders, at cheaper prices (since the producers have no development costs to reimburse) is subject to several rules and limitations which aim to balance the urgent health interest with the patent owner's intellectual property rights. For example,

- The government providing for compulsory licensing must inform the patent holder within a reasonable time.
- The duration of the compulsory licensing is limited to the time necessary to achieve the purpose for which it was authorized.
- The compulsory license should be used predominantly for supply to the domestic market of the issuing government.<sup>4</sup>
- The legal validity of any such act is subject to judicial or equivalent review.

The language of Article 31 attracted criticism for being vague and insufficient. For example, it does not explain expressions like "national emergency," or "extreme urgency" (e.g., Noam, 2005; Halagian, 2013). The developing countries and LDCs complained that the conditions to issue compulsory licenses are too strict, implying only limited accessibility to affordable medicines and vaccines. They particularly mentioned the requirement to negotiate with the patent holder in good faith and demonstrate efforts to obtain a voluntary license on reasonable commercial terms<sup>5</sup> as burdensome and time-consuming, hindering countries from addressing effectively public health needs, particularly in emergencies. The developing countries and LDCs believed that Article 31 was thus imbalanced in favor of patent holders, contributing to the rise of pharmaceuticals' prices, and decreasing their accessibility to medicines, vaccines, and foreign-owned innovative technologies. The pharmaceutical industry argued that Article 31 – weakening patent protection by allowing compulsory licensing - undermines the incentive for research and development in that industry. The hosting developed countries supporting it<sup>6</sup> suggested that

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<sup>3</sup> There are no WTO definitions for "developed" or "developing" countries. A United Nations list currently includes 46 LDCs (United Nations, 2023). Five of them are WTO members: Bhutan, Comoros, Ethiopia, Sao Tomé & Príncipe, Somalia, South Sudan, Sudan and Timor-Leste.

<sup>4</sup> Article 31(f) of the TRIPs. Its language prevents export of the pharmaceuticals based on a waived patent to other countries, lacking manufacturing capacity.

<sup>5</sup> Emanating from Article 31(h) of the TRIPs. Developing countries and LDCs usually cannot afford paying adequate remuneration to the patent owner. Moreover, difficulties could arise in determining the appropriate "economic value of the authorization" the article requires.

<sup>6</sup> McGuire (2004, 276) stresses the link, underlining international trade, "between corporate strategies and policy preferences and government regulatory regime." It emanates from their interdependency. McGuire (278) mentions the strong lobbying role the US pharmaceutical industry filled in the TRIPs initiation.



stronger protection of intellectual property rights serves to attract investment to developing and least developed countries, which could enhance their economic growth (Vincent, 2020).<sup>7</sup>

Developed and developing countries discussed Article 31 deficiencies at the beginning of the WTO Doha Round, leading to the Doha Ministerial Declaration (2001). The Declaration modified the balance of interests Article 31 reflects (Abbott, 2002), in favor of the poor countries (and not without criticism – e.g., Sykes, 2002), by stating that public health emergencies would be within the admissible grounds for compulsory licensing and admitting compulsory licensing through importation. This innovation acknowledged the fact that "the poor can often not afford the risk of being entrepreneurial" (Winters, 2015, 258), namely that poor countries seldom have the capacity or the know-how to produce the patent-protected medicines or vaccines necessary to overcome a pandemic such as COVID-19. They must import them. A recent survey reveals that approximately 22 percent (37 of 164) of WTO members lack the domestic capacity to manufacture basic small-molecule pharmaceuticals. An additional 6 percent (10 of 164) maintain only limited domestic manufacturing capacities (Wong, Cole, & Kohler, 2022, 11).

Already in 2003, the WTO introduced a waiver to provide members lacking domestic manufacturing capacity with the means to import medicines under compulsory licensing. A following General Council decision on the "Amendment of the TRIPS Agreement" (WTO, 2006) eventually led to a legal amendment of the TRIPS agreement, in 2005, adding article 31bis, aiming to clarify article 31 and providing more detailed instructions for its implementation. Since this amendment had to be accepted by two-thirds of WTO members, it came into force only in 2017.

Article 31bis flexes the provisions of Article 31, allowing the issue of compulsory licensing to import the necessary pharmaceuticals from other countries. In addition, it allows for the grant of a compulsory license to the extent necessary for the production of a pharmaceutical product and its export to an eligible importing member state (Palmela Fidaglo, 2018). At the same time, it prevents the abuse of that mechanism to circumvent the general respect of patent rights, e.g., by exporting cheap medicines or vaccines from eligible to non-eligible states.

### *Common Deficiencies*

However, article 31bis did not solve the other deficiencies of this mechanism. Current literature notes several shortcomings of it:

- (1) Governments fail to legislate sufficient national laws implementing this mechanism (Wong, Cole, & Kohler, 2022), particularly in member states lacking manufacturing capacity such as some African countries (Palmela Fidaglo, 2018).
- (2) Strong political pressures<sup>8</sup> to refrain from compulsory licensing (Palmela Fidaglo, 2018), affect the behavior of developed countries hosting pharmaceutical industries.

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<sup>7</sup> Growth is an important engine for improvement of developing and least developed economies. (Winters, 2015, 259).

<sup>8</sup> For example, an analysis of USTR special 301 report from 1994–2021 revealed that the US constantly placed countries that issued pharmaceutical compulsory licensing on the Special 301 Report Priority Watch List. A similar list exists in the EU (Wong, Cole, & Kohler, 2022, 15). Such practices were already known in the past, e.g., in the beginning of the millennium the US administration and the pharma

- Their economic threat to developing countries and LDCs implies a high risk of issuing compulsory licenses. Consequently, countries lacking production capacity opt for alternatives such as pooled procurement mechanisms or direct price negotiations (Wong, Cole, & Kohler, 2022, 17).
- (3) The process involves sophisticated procedures and administrative burdens which are not consistent with emergency times or with the administrative capability of the developing states at stake (Palmela Fidaglo, 2018; Vincent, 2020).
  - (4) Patent holders are not keen to collaborate through the process. During the COVID-19 pandemic, pharmaceutical manufacturers in Bangladesh, India, Denmark, and Canada have reportedly failed to secure licenses to produce vaccines from the rights-holders (Kianzad & Wested, 2021, 83).
  - (5) The compulsory licensing mechanism applies on a case-by-case, country-by-country basis. This is not efficient in a global pandemic scenario (Thambisetty et al., 2021, 27).
  - (6) Constraints on the number of members eligible to serve as exporters under Article 31bis, emanate from the lack of eligible exporters, in addition to deterring, burdening procedures they must follow to engage in such export. (Wong, Cole, & Kohler, 2022, 11).
  - (7) The wording of articles 31–31bis does not take into account novel therapeutics, including biologics, cellular-based therapies, and gene-based therapies.
  - (8) Articles 31–31bis do not address potential conflicting provisions in other international agreements, particularly data exclusivity provisions.
  - (9) Article 31bis includes an Annex, in which Australia, Canada, the EU, Iceland, Japan, New Zealand, Norway, Switzerland, and the United States stated that they would not make use of the agreed system as ‘eligible importing’ Members. While this decision seems understandable at first sight, effectively it automatically decreases the potential market for producers manufacturing under compulsory licensing, rendering their production less cost-efficient and thus more expensive for the needing, poor countries, while at the same time preventing access to relatively cheap medicines or vaccines from the citizens of the countries in the list (Abbott & Reichman, 2020).<sup>9</sup>

In 2007 Rwanda used that mechanism to import from Canada pharmaceutical products for HIV/AIDS treatment. Due to the deficiencies mentioned, process completion and shipment took nearly three years. Those countries shared their experience with the other WTO members. It became evident that this mechanism would not deliver in emergencies (Palmela Fidaglo, 2018; Vincent, 2020), while a more effective procedure could facilitate the exhaustion of production capacity by other producers than patent holders, thus substantially increasing the quantities of available vaccines and save lives, e.g., during the COVID-19 pandemic (Thambisetty et al., 2021, 38).

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industry challenged Brazil, Thailand, South Africa and the Dominican Republic for reducing the costs for drug treatment against HIV/AIDS (Capling, 2004, 190).

<sup>9</sup> Other WTO members undertook a more moderate approach, indicating that they will use this system only in emergencies or extreme urgency: Hong Kong, China, Israel, Korea, Kuwait, Macao China, Mexico, Qatar, Singapore, the Separate Customs Territory of Taiwan, Penghu, Kinmen and Matsu, Turkey, and the United Arab Emirates. During the COVID-19 pandemic, Israel and Russia were among the countries which issued compulsory licensing (Kianzad & Wested, 2021, 74).

## **The Temporary Wholesale Waiver in the COVID-19 Pandemic: An Attempt to Initiate One Comprehensive Step Instrument**

Attempting to overcome the slow and sophisticated process of Articles 31-31bis mechanism implies (Chaudhuri, 2021, 11), during the COVID-19 pandemic, the EU proposed emergency relaxation of the Article 31bis notification requirements. To overcome the necessity to effectuate this mechanism on a case-by-case basis, India<sup>10</sup> and South Africa proposed, at the WTO in October 2020, a wholesale waiver of the patent, industrial design, undisclosed information, and copyright sections of the TRIPS Agreement concerning the prevention, containment, and treatment of COVID-19 (WTO, 2021). In May 2021, a clarification ensured it refers to pharmaceuticals. (Thambisetty et al., 2021). This suggestion invoked strong disagreement between the conflicting stakeholders (The Economist, 2021; Yu, 2022). The pharmaceutical industry's position was particularly disturbing in light of the pandemic's severity and the fact that the vaccine research enjoyed unprecedented amounts of public funding. (Thambisetty et al., 2021, 10). For the first time, the US deviated from its aggressive support of the pharmaceutical industry, expressing its support for a limited TRIPs waiver applicable to all COVID-19 vaccine-related technology (Rimmer, 2022, 55–61).

A WTO Ministerial Decision on the TRIPs Agreement (WTO, 2022) and a Declaration (WTO, 2022a) from the same day eventually initiated the waiver. The Decision is to have effect for five years, but the General Council may extend that period, taking into consideration the exceptional circumstances of the pandemic. While allowing eligible WTO members<sup>11</sup> to go temporarily beyond the requirements in Articles 31 and 31bis TRIPs to manufacture COVID-19 vaccines, the waiver is limited by several aspects:

*Scope* – the discourse leading to it exposed the complexity of intellectual property rights structure, involving, besides the patents, trade secrets and know-how (e.g., production methods), non-disclosure agreements, data exclusivity, regulatory exclusivity, etc. (Thambisetty et al., 2021). All these issues must be addressed to obtain an effective waiver, but the eventual waiver's scope is considerably narrower than the original waiver proposal.

*Enforcement* – skeptics doubted whether a waiver would enforce the pharmaceutical companies to reveal all the relevant know-how (Hilty et al., 2021).

*Context* – the waiver can only suspend TRIPs obligations, thus leaving in place national regulation, provisions of multilateral IP agreements, bilateral and regional trade and economic agreements, and investors' rights under bilateral investment treaties - BITs (Mitchell, Taubman, & Samlidis, 2022). For all these reasons, some consider it to be a compromise that pleases neither side (Yu, 2022, 11–16; Mitchell, Taubman, & Samlidis, 2022).

*Timing* – beyond the substantive debate, the very need to adjust the mechanism during the pandemic and reach a political agreement among conflicting interests in real-time caused precious time lost. Additionally, a change of rules amidst a crisis, in times of asymmetric information, enhances uncertainty and may imply an economic cost (Kovac & Rakovec, 2020, 15–16).

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<sup>10</sup> Before the TRIPs conclusion, India did not protect pharmaceutical products and had strong generic pharmaceutical industries. It had a patent regime that covered process patents, but not product patents, and kept the patent term for pharmaceuticals relatively short (Dhar & Gopakumar, 2006). India adapted its domestic laws to the agreement, but still has a substantial generic pharmaceutical industry.

<sup>11</sup> The waiver does not improve WTO LDC members' situation, since they are not required to apply any substantive provisions of TRIPs until at least July 2034 (WTO, 2021b).



Thus, it may be advisable to use the COVID-19 experience to discuss further improvement of this mechanism *before* rather than *during* the next emergency.

### ***Permanent Ways to Overcome These Deficiencies***

The current literature suggests several ways to overcome the above-mentioned deficiencies:

#### *Facilitate the Use of Article 31-31bis Mechanism*

##### *(1) At the domestic level*

- Initiate a global effort to enhance national legislation that would enable the effective use of the compulsory licensing mechanism. For developing countries and LDCs, technical assistance by WIPO, UNPD, and other international organizations is advisable.<sup>12</sup>
- Modify domestic legislation in the producing countries to facilitate the export procedure to eligible countries, under compulsory licensing.
- Adjust domestic procedures to the short time framework necessary in emergencies.

##### *(2) At the international level*

- Increase political support for compulsory licensing, to counter the political pressure by pharmaceutical firms against it (Wong, Cole, & Kohler, 2022, 18).
- Use regional agreements to enjoy the relief of article 31bis (3), by which the importing country using compulsory licensing can distribute the imported pharmaceuticals to its partners to such a regional agreement, sharing the same health problems.<sup>13</sup> According to current WTO law, this option is quite limited.<sup>14</sup>
- Prevent the abuse of this mechanism for drug-sharing with non-eligible patients, by ensuring the given doses suffice solely for individual consumption of eligible patients.

##### *(3) Joined national and international efforts*

- Encourage the development of scientific infrastructure in developing countries and LDCs (Vincent, 2020).

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<sup>12</sup> See, e.g., a proposal to do so in the Malaysian law (Hingun & Nizamuddin, 2020). A similar approach of using 'Crown Use' or 'Government Use' provisions in national law was suggested during the pandemic in the UK, and in Australia (Rimmer, 2022, 38–40).

<sup>13</sup> This suggestion is inspired by the opposite, developed countries' strategy known as TRIPs plus, namely their efforts to achieve *stronger* IPR protection in than the TRIPs agreement offers, in bilateral and regional agreements (Mercurio, 2006).

<sup>14</sup> "As according to paragraph 3 of the protocol amending the TRIPs Agreement, the country must be a member of a WTO recognized regional trade agreement (RTA) and at least half of the countries parties to that RTA must be on the United Nations list of least developed countries. Furthermore, the country seeking to issue the compulsory licensing is the main responsible for administration, importation and re-exportation of the medicine to the other participating members of the RTA" (Kianzad & Wested, 2021, 83–84).

This suggestion is very challenging. Rivers of Ink were written about the importance of encouraging the development of industries based on know-how and innovative technologies (such as pharmaceutical industries) in developing countries and LDCs (e.g., Saggi, 2002; Hertel & Winters, 2005). Commentators seem to agree that developing scientific infrastructure and production capacity based on know-how, that developed countries may share with developing countries and LDCs, would upgrade the latter's economies (Winters, 2015, 260). "By definition, developing countries lag behind the technology frontier and confront the issue of how best to bridge the technology gap. For this purpose, they need to rely on inflows of foreign technology, as well as indigenous research and development" (Saggi, 2002, 351). However, many challenges stand in the way of achieving this goal. One difficulty is obtaining the consent of knowledge holders to share or sell it. To overcome this obstacle, several commentators suggest enforcing developed countries' *obligation* for technology transfer according to Article 66.2 TRIPs (e.g., Yu, 2022, 17). Buying knowledge may be too expensive for poor countries, although it may be cheaper than developing a new vaccine or medicine (Love, 2021). Buying technology is not a one-time decision but rather an ongoing process of development, as COVID-19 vaccine development illustrates. Thus, it would necessitate investments of both the buyer and seller (FDI). It could take the form of licensing technologies and trademarks to unaffiliated firms, or rather to subsidiaries or joint ventures (Maskus, 2002, 369). Thambisetty et al. (2021, 23) believe that governments could establish, by regulation based on the waiver, a combination of incentives and mandates to cause disclosure of the necessary information. In any case, diffusion of the foreign knowledge into the local market, leading to indigenous R&D would necessitate an adequate stock of human capital (Saggi, 2002; Maskus, 2002) in the developing country at stake. The innovators must learn to absorb foreign technologies and adapt them to the local conditions. National regulation (and supporting policies, e.g., regarding taxation, recognition of business costs, market access, competition policy, access to relevant information, and administrative burden) plays an important role in any successful or unsuccessful process. Finally, careful, balanced mutual communication would be inevitable in any such process, rather than a superior approach of the developed countries, which traditionally fails (Agunga, 1997).<sup>15</sup>

Programs to promote technological change are likely to contribute to the fulfillment of this end in higher-income developing countries (Maskus, 2002, 372), but lower-income developing countries and LDCs may lack such resources. For example, only India and South Africa produced COVID-19 vaccines, and not in significant quantities (Boudierhem, 2022, 184).

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<sup>15</sup> Agunga (1997) mentions several approaches assuming Western superiority while trying to help developing countries and LDCs, that failed: the post-World War II development theory, assuming the superiority of the Western world and its power to bring development to the poor countries, the dependency theory, linking under development of these countries with their dependency on central economies, the growth-with-equity theory, that realized the difference between different poor countries' regimes and attributed responsibility for their situation to their leaders, stressing the need to change employment patterns, encourage privatization, improve human resources and change the international approach towards these countries.

### *Exhaust Article 31 Possibilities*

- Countries can use TRIPs Articles 31(k) and 40, which mandate limitation and enforcement against anti-competitive behavior of patent holders, to counterfeit unjustified refusal to license or imposition of excessive, unfair prices (Kianzad & Wested, 2021, 89–90).

### *Improve Article 31bis Mechanism*

- Waive data exclusivity (under strict conditions) as part of the compulsory licensing framework (Vincent, 2020).

### *Use an Alternative Mechanism – the TRIPs Security Exemption*

Article 73(b)(iii) TRIPs offers a mechanism known as the “security exception.” Such exceptions are common in international trade agreements.<sup>16</sup> States can invoke them to defend their non-compliance with the relevant trade agreement for security reasons. Article 73 (b) (iii) TRIPs provides:

Nothing in this Agreement shall be construed:

- (b) to prevent a Member from taking any action which it considers necessary for the protection of its essential security interests...
- (iii) taken in time of war or other emergency in international relations.

Traditionally, states associate such provisions with wartime, security threats, or emergencies of a similar nature. Two WTO panels (WTO, 2019; WTO, 2020) recently interpreted the equivalent GATT Article XXI and TRIPs Article 73(b)(iii), respectively, contending that their interpretation should be narrow, namely referring only to severe cases. The panel in *Russia – Traffic in Transit* (WTO, 2019, para. 100) stressed that economic or political conflicts between states will only come within this exception if they “*give rise to defense and military interests, or maintenance of law and public order interests.*” This interpretation invokes doubts as to whether this wording could include a global, or broad scale, pandemic.

Nevertheless, in the post-COVID-19 era, some (e.g., Abbott, 2020; Oke, 2021, and other scholars mentioned in footnote 8 thereof) suggest interpreting the words “other emergency in international relations” as including such pandemics and global health emergencies, at least to the extent “where a pandemic affects the ability of a state to maintain law and public order” (Oke, 2021, para. 18) to use this provision to circumvent the problematic procedure of Articles 31–31bis, with all its deficiencies, or at least threat to do so, to obtain better patent holders’ collaboration in applying Articles 31–31bis mechanism.

Oke (2021) illustrates how the conditions this provision sets forth, as the two WTO panels mentioned interpreted them, could be met to establish a strong link between such a pandemic and the emergency this provision mentions, in terms of timing and substance. However, he stresses that this mechanism would neither help countries that cannot produce the pharmaceuticals domestically, nor save the burdensome procedure according to article 31bis for the exporting country.

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<sup>16</sup> E.g., Article XXI GATT, Article XIV GATS.

Mitchell, Taubman, and Samlidis (2022, 173–174) doubt the rightness of using this provision in this context, due to the need to enhance global solidarity rather than signal that individual Members' national security interests should prevail over vaccine equity.

The literature toying with this possibility seems to underestimate the basic interpretative rule contending that specific rules should prevail over general rules. Applying this rule would cast great doubt as to the feasibility of consciously circumventing TRIPs articles 31–31bis mechanism, reflecting a delicate balance of agreed interests, with article 73 (b)(iii) mechanism, which was traditionally devised for other purposes. Another common interpretative rule, stating that later rules (article 31bis added in 2005) prevail over earlier rules (article 73 forming part of the original TRIPs text from 1995), would reinforce this conclusion.

### **Section 3: The Challenge of Limited Production Capacity in Times of Crises**

#### *Inaccessibility to Medicines and Vaccines Due to Limited Production Capacity*

None of the mechanisms discussed so far ensures fair accessibility of poor countries to medicines or vaccines in limited global *production capacity* circumstances (Munin, 2021).

The basic presumption underlying the mechanisms discussed is that the major reason for poor countries' inaccessibility to pharmaceuticals or vaccines that are necessary to cure a broad-scale pandemic is their *high prices*, emanating from their patent or IP protection. Thus, these mechanisms focus on enabling relatively cheap production by temporarily waiving IP protection.

However, in the COVID-19 pandemic, unlike in the burst of the previous HIV/AIDS epidemic (Sykes, 2002; Aginam, Harrington, & Yu, 2013), the price was only an indirect obstacle for poor countries' accessibility to pharmaceuticals. The major challenge was the pharmaceutical companies' argument that they only have *limited global production capacity*, which could not meet the entire global demand in real-time (Ragavan & Vani, 2021). Some wonder whether this alleged limited capacity was real or artificial. For example, Thambisetty and others (2021, 38–39) contend that global production capacity was not fully exhausted during the COVID-19 pandemic. The patent holders objected to the production of vaccines by other producers or in other countries, allegedly fearing for the patent's safety. Pfizer CEO, Albert Burla, argued that the major difficulty was not production capacity but rather the lack of raw materials necessary for the production of the vaccine, but others contend that this is also a result of relying, for their supply, on a small number of suppliers creating an oligopolistic market. In effect, though, the market experienced an ongoing shortage of vaccines. Consequently, the developed countries hurried up to sign contracts with the producing pharmaceutical firms (Santos Rutschman, 2020; Joseph & Dore, 2021). The latter abused the gap between supply and demand to raise the prices, excluding the poor countries from the race.

#### *No Willingness to Share Knowledge*

Attempts to encourage voluntary sharing of know-how, to boost production, did not deliver the anticipated outcome, because patent holders did not collaborate. Such attempts included the following:

- C-TAP, an initiative by Costa Rica and the World Health Organization (WHO), to establish a voluntary pool of IP, data, and know-how regarding COVID-19 vaccines, failed.

- The Medicine Patent Pool, had only limited success in sharing know-how relevant to the COVID-19 vaccine (Rimmer, 2022, 20–23).
- The WHO initiated the ACT-Accelerator, a global collaboration to accelerate the development, production, and equitable access to new COVID-19 diagnostics, therapeutics, and vaccines (Rimmer, 2022).

### *No Willingness to Give Up Prioritized Access to Vaccines*

During the COVID-19 pandemic, governments were willing to contribute funds to assist developing countries and LDCs. Nevertheless, none of them were willing to sacrifice their priority access to available vaccines in favor of these nations. This stance was not limited to just the first dose but also applied to the second and third doses, despite the recognition that any unvaccinated population in the world poses a potential risk to the entire global population due to the spillover effect, which is exacerbated by globalization.

One of C-TAP components is COVAX, a direct initiative held by the World Health Organization, CEPI, Gavi, and UNICEF aimed at financing vaccines for poor countries. Serving as an insurance policy, this initiative fosters cooperation among affluent nations, encouraging them to unite their purchasing power instead of engaging in vaccine competition. By expediting the development and production of COVID-19 vaccines, it facilitates investments in manufacturing facilities, thereby potentially increasing the number of available doses promptly once the vaccine is ready.

The functioning of these initiatives was criticized from different aspects (Rimmer, 2022, 16–20). Eventually, they could not solve the urgency of vaccine inaccessibility in the short and medium run. Thus, in January 2022, almost two years after the COVID-19 burst, there were still 34 countries at or below 10% of vaccine coverage (World Health Organization, 2023).

### *Ways to Meet this Challenge*

#### *Legal Framework and Approach*

##### **(1) Amending Article 31–31bis Mechanism?**

The WHO<sup>17</sup> may form a better auspice to provide for the formula by which vaccines or medicines should be allocated in future pandemics than the WTO, where trade and business considerations naturally prevail.

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<sup>17</sup> The developing countries have been using the WHO for years to restrain the TRIPs consequences and encourage the use of its flexibilities to their favor (Hefler, 2004, 42–44). Moreover, several commentators stress the human right for health which the UN Charter (United Nations, 2023a) acknowledges, underlining several international health treaties, such as: the Universal Declaration of Human Rights (UDHR), Article 25 (United Nations, 2023, b) and International Covenant on Economic, Social and Cultural Rights, Article 12, (United Nations, 2023c) as a right that should prevail over the TRIPs IPR protection. They believe that the WHO should have the power to see to it (e.g., Thambisetty, 2021, 4–5; Kianzad & Wested, 2021, 76–77; Boudierhem, 2022).

In terms of procedure, the slow and elaborated process in which Article 31–31bis mechanism developed illustrates that the chances for quick and efficient changes of the WTO/TRIPs mechanisms, before another pandemic hit, are low.

## (2) Sticks or Carrots to Countries?

Any global effort to enhance the fair distribution of medicines or vaccines to cure a global pandemic should rely on a reinforcing mechanism, that could consist of sanctions, peer pressure (i.e., ‘sticks’), or economic or political incentives (i.e., ‘carrots’).

To the extent the mechanism ensuring fair accessibility to medicines and vaccines in global pandemics is part of a WTO agreement, it automatically enjoys the WTO dispute settlement mechanism. That could save time and effort and ensure its reasonable effectiveness.

Otherwise, the establishment of such a mechanism may necessitate new global regulations. This may invoke questions such as: who will gain the power to enforce this regulation? What sanctions will apply? And how will they be enforced? Which sanctions will be strong enough to prevent the strong existential national drive to obtain the medicines or vaccines first, at any cost?

One suggestion is to use the UN Charter Chapter IX legally binding obligation to cooperate in matters representing a threat to international peace and security but also to the development of peaceful interstate relations, especially in the field of economic and social matters, to strengthen WHO’s role as a leading power in international health emergencies like the COVID-19 pandemic (Bouderhem, 2022, 181–182).<sup>18</sup>

However, the WHO lacks a governing body that can implement mechanisms like compulsory licensing or wholesale wavers efficiently during such crises. Padmanabhan (2021) suggested that the international community can establish a governing body or form a trilateral council composed of the WHO, the WTO, and WIPO to deal with global disasters such as COVID-19 and modify the TRIPS Agreement to form a body that can act and implement compulsory licensing provisions to collate research initiatives from around the world once a pandemic has been identified.

## (3) Peer Pressure?

Global peer pressure on countries that might not respect the principle of fair accessibility may be a mid-way between the ‘stick’ and ‘carrot’ approaches. Its political (rather than strict, legal) nature could provide the necessary sensitivity and flexibility that a legal approach lacks, forming an advantage in stressful global crisis times. Moreover, peer pressure may imply some way of long-run exclusion from the global community for those who will not adhere to it. In a global pandemic, states may hesitate before risking such exclusion. However, this approach necessitates broad global cooperation. If the strong countries would not engage in it, it would not be effective.

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<sup>18</sup> The WHO initiative of April 2023, to improve pandemic preparedness PRET (WHO, 2023a), may mark a first step in this direction.

#### (4) Economic Incentives to Countries?

Economic incentives may ‘persuade’ countries to adhere to the principles of fair accessibility to the necessary pharmaceuticals. However, in emergency times the drive to life may be stronger than the eagerness for such incentives. Moreover, such incentives could be less important, or less tempting, for the developed rich countries, those who hurried to gain priority in terms of access to vaccines during the COVID-19 pandemic, because they could afford it.

#### (4) Focusing on the Business Sector Rather than on States?

##### *Voluntary Ethical Code of Conduct?*

In recent years, consumers have gained a growing power by dictating an ethical agenda in terms of the environment, labor rights, political values, etc., threatening multinationals to adhere to values of fairness in these respects or risk losing clients (Klein, 1999; Vogel, 2005; Shamir, 2007; Munin & Sitbon, 2021, 2022). This phenomenon has led multinationals to engage in voluntary codes of conduct which they draft (Munin, 2013). Global consumers could assume pressure on multinational pharmaceutical companies to stop concluding contracts for the sale of pandemic vaccines, or medicines, or both, motivated purely by profit maximization considerations. They could require that the pharma multinationals draft relevant codes of conduct and adhere to them. Governments could either support such an initiative or not. However, it is doubtful whether a sufficient number of panicked individuals, terrified by a life-threatening pandemic, would engage in such an altruist campaign in real time. Such an initiative should be launched when no real threat exists. Moreover, to change pharmaceutical companies’ behavior, it has to be a well-concerted, broad-scaled campaign. Thus, it would be more efficient if global NGOs lead it.

Hitherto, voluntary codes multinational companies drafted regarding issues such as child labor, equal terms of work for men and women, etc. served mostly to improve their global image, while effectively their profit consideration prevails (Munin, 2013).

##### *Economic incentives to companies?*

Could economic incentives such as tax reliefs, subsidies, risk management schemes such as insurance (Climate Adapt, 2023), or even attractive business opportunities, persuade multinationals to perform fair distribution of the relevant pharmaceuticals? To the extent they are interested in the profit line, they might, if they turn out to be more profitable than the highest price chargeable for the pharmaceuticals. However, that would impose a great financial burden on the incentives’ contributors, in addition to any extra economic and financial stress emanating from the crisis. Moreover, the rich countries will have to make the lion’s share of any such contribution. That may conflict with their political short-term interests. They may face strong national political pressure to obtain the pharmaceuticals as soon as possible, and additional pressure from the pharmaceutical industry that may attempt to leverage its position to increase the offered benefits.

## ***The Substance of New Arrangements or Rules***

### *(1) Extend the Compulsory Licensing Mechanism (Articles 31-31bis TRIPS)*

Gurgula and Hull (2021) suggest complementing the existing mechanism of compulsory licensing with compulsory licensing of trade secrets, to enhance involuntary technology transfer.

### *(2) Equal Distribution According to the EU Model?*

During the COVID-19 pandemic, the EU insisted on handling and coordinating the vaccine procurement for all its members and on their equal access to the vaccines (European Union, 2021). This model seems to have ensured reasonable prices due to the strong bargaining power of all 27 members and equal distribution of the vaccine in the member states, which prevented hard feelings. This model was possible in the EU due to its unique supranational regime. Applying such an approach globally would necessitate the establishment of a common legal basis that would provide so.

In terms of substance, the establishment of such a mechanism would necessitate a broad global agreement that would give up national priorities in favor of global solidarity. This goal may be difficult to obtain in the absence of a real, imminent, global threat to human health, among countries sharing a lower level of economic integration than the EU members. Therefore, it is not very feasible. The multinational pharmaceutical industry will surely try to undermine such initiatives. Moreover, the criticism of the EU action during the pandemic that detained accessibility to vaccines to its citizens for a substantial time, and its severe consequences, particularly in countries such as Italy, may deter countries to apply this approach in the future.

### *(3) Ensure Accessibility through Alternative, Asymmetric Models?*

To ensure the effectiveness of COVAX, or any similar mechanism, the international community may work out a formula that will balance the short-term conflicting interests between developed and developing countries.

A simple formula could suggest the accessibility of countries to the necessary pharmaceuticals according to the severity of the pandemic's burst in them. During COVID-19, certain countries, particularly China, were accused of reluctance to report their real situation to the WHO. Such a formula may encourage true reporting of the situation, in real-time, to gain priority of access to vaccines or medicines. At the same time, it could encourage false reporting to gain such priority, thus necessitating careful WHO inspection. The advantage of this formula may be the allocation of the relevant pharmaceuticals according to the real need. Nevertheless, if a pandemic burst severely in too many countries at once, such an arrangement may not solve the problem.

A more sophisticated design of such a formula may suggest a rotating, alternating priority of access to the necessary pharmaceuticals based on predefined beats, in terms of quantities and prices, that could be asymmetric. Namely, in each beat, the developed countries would be entitled to greater quantities subject to full price payment, while the developing countries and LDCs will be entitled to reduced quantities, at lower prices. The ratio between the quantity of vaccine or medicine doses in each beat may be asymmetric, e.g., 2:1 (or any other agreed ratio).



This model could be fine-tuned to include more than two categories of countries, according to their level of development, financial capabilities, or any other agreed criterion.

An asymmetric ratio may satisfy the strong drive for priority of the developed countries and the financial expectations of the pharmaceutical patent holder. It would compromise 'equitable' access of developing countries and LDCs to the necessary pharmaceuticals but would ensure some accessibility, which is better than none. The existence of such an agreed formula that could be applied in such crises may save precious time and lives once they occur.

#### *(4) Determine a Maximum Level of IPR Protection in Emergencies?*

The TRIPs agreement established *minimum* IPR protection rules. Its members are allowed to impose stricter rules and indeed, some of them do it either in their national law or bilateral and regional agreements. In 2009, Ruse-Kahn suggested limiting the scope of such protection by establishing a *maximum* threshold, or binding ceilings, to ensure the protection of other values, conflicting with IPR. This approach gains new momentum following the COVID-19 experience. Thus, this idea may be seriously considered, at least for such emergency circumstances. The establishment of a 'ready-made' body of rules that countries will be able to apply in such occasions may save precious time and lives once they occur.

#### *(5) New, Mandatory Global Rules?*

Many commentators believe that due to the given conflict of interests, and the experience gained in the COVID-19 pandemic, only *mandatory* rules may force the pharma industry and its protectors to change their ways to ensure fair accessibility of poor countries to necessary vaccines or medicines in such circumstances.

Within the WTO realm, Mercurio and Upreti (2022) suggest focusing on identifying and reducing barriers to vaccines and related products, particularly regulatory bottlenecks.

In addition to cooperation under existing WHO and WTO rules, Boudierhem (2022, 181–182) suggests that the WHO will classify vaccines and medicines developed to combat pandemics as essential medicines. The global community will develop new international binding rules, possibly amending the International Health Regulations of 2005, to which the WHO is responsible, that would suspend intellectual property rights in times of global pandemics, until the world reaches a rate of 70% of vaccinated adults, to ensure equitable accessibility of the poor countries to vaccines or medicines. Yu (2022, 18) suggests that when the pandemic subsides, patent holders' rights could be extended, to compensate them for their temporary losses. Padmanabham (2021) contends that retroactive compensation could also encourage voluntary licensing, subject to a guarantee to patent holders that their IP would be used in good faith by reputable licensees. Such licenses could be inclusive or non-inclusive.

Other suggestions for mandatory rules (Abbott and Reichman, 2020) include:

#### *On the supply side*

- Establish mandatory patent pools, on a global, regional, or national basis. This suggestion is not very feasible in light of the strong opposition of pharmaceutical companies and vaccine and medicine developers (e.g., Rimmer, 2022, 29–30).
- Create shared production facilities.

*On the demand side*

- Establish regional pharmaceutical supply centers for collective procurement, that would help countries by coordinating the issuance of necessary compulsory licenses for production and/or importation and leveraging their collective bargaining power (like the EU did with COVID-19 vaccines).

### **Conclusion**

COVID-19 illuminated the shortcomings of existing WTO-TRIPs mechanisms aiming at reducing the price of pharmaceuticals necessary to cure a global, or large-scale, pandemic, and the absence of a complementary mechanism that would ensure poor countries' fair accessibility to such pharmaceuticals when the major obstacle is not their price but rather their availability, due to limited production capacity. At the end of July 2023, 2.2 billion people around the world were still unvaccinated against COVID-19. The majority of them lives in developing countries and LDCs (UNDP, 2023).

The growing global realization of these challenges yields a growing body of contemporary literature, looking at potential solutions. Examination of the potential suggestions to overcome these challenges reflects that there seems to be no one ideal way to do it and that the success of any chosen instrument or approach (or a combination thereof) would depend, first and foremost, on the broad abandonment of the individual and national approaches in favor of global collaboration. Such collaboration, or at least coordination, could take place under the auspice of the WTO, subject to improvement of its current mechanism in line with the suggestions discussed in the article, or alternatively, under the WHO auspice, subject to the establishment of an implementing mechanism. Yet another option is to establish a global coordinating council consisting of WTO, WHO, and WIPO representatives. Immediate action is imperative, realizing that the COVID-19 pandemic may not be the last global pandemic and that in the long run, there is no true conflict of interests between developed and developing countries, or between the public and the patent holders, since nobody is safe until everybody is safe (Kianzad & Wested, 2021).

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### Discussion Questions

1. In what circumstances should poor countries be entitled to prioritized accessibility to pharmaceuticals in times of pandemics?
2. What criteria could ensure fair distribution of pharmaceuticals between rich and poor countries in pandemic times?
3. Do you think that hard law or soft law instruments, ‘sticks’ or ‘carrots,’ would be more efficient to handle poor countries’ accessibility to pharmaceuticals in times of pandemics?

### About the Author

Professor Nellie Munin teaches at the law school of Zefat Academic College in Israel. Her fields of academic and research interests include international trade law, international taxation, EU economic law and innovative didactic methods for law teaching. Formerly, she served as Chief Legal Advisor of the State Revenue Administration at the Israeli Ministry of Finance and as Minister of Economic Affairs in the Israeli Mission to the EU.

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“Central London”  
2023

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# **Effects of Short-Term Goal Setting on Enjoyment and Session Rating of Perceived Exertion during a Rowing Task**

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## **Abstract**

Goal setting and enjoyment are key components in adherence to any exercise program; however, little research has examined short-term goal setting exercise interventions. This study aimed to explore the effects of short-term goal setting on enjoyment and session rating of perceived exertion (sRPE) during a rowing exercise task. Twenty-five physically active participants completed two rowing exercise sessions on separate occasions under a repeated measures design. Each participant completed one session under the experimental condition and one session under the control condition. The experimental session included using a pacer on the interactive rower screen during two separate rowing bouts, which served as a goal setting simulation. In both conditions, participants set goals for their second rowing bout. Results showed non-significant differences between conditions for enjoyment, sRPE, heart rate, and distance rowed. Results showed a significant difference for distance rowed from exercise bout one to exercise bout two in both the control condition ( $p = .002$ ) and experimental condition ( $p = .029$ ). The results of this study have relevance for applied practitioners implementing physical activity interventions.

## Keywords

physical activity, sRPE, exercise adherence, exercise psychology

## Introduction

Physical inactivity is a major national health concern, with less than 5% of adults participating in 30 minutes of physical activity daily in the United States (U.S. Department of Health and Human Services [HHS], 2018). In 2018, the Centers for Disease Control and Prevention (CDC) reported that 42.4% of adults in the U.S. were obese, and 9.2% of adults were severely obese (Hales et al., 2020). Physical activity is an effective strategy for managing a healthy weight, reducing the risk of cardiovascular disease and all-cause mortality, as well as improving quality of life (HHS, 2018). Enhanced adherence to physical activity programs in more adults could reduce the prevalence of obesity through weight management and improve quality of life. Adherence is an essential component of any exercise program. Consistency with an exercise regimen allows individuals to achieve maximal results, and the motivation to continue pushing themselves through each exercise session. Even in those who are not struggling with excess weight or obesity, greater rates of physical activity could provide benefits in physical outcomes, including improved sleep, bone health, and mental health outcomes, including reduced risk of anxiety, depression, and dementia (HHS, 2018).

Considering the vast benefits of exercise, it is important to consider how to increase adherence. Goal setting and enjoyment are key components in adherence to any exercise program. Goal setting may lead to positive physical activity outcomes, which include increased levels of physical activity (Lewis et al., 2016), increased adherence to exercise programs (Hartmann et al., 2015; Konstantinou et al., 2022), and improved performance (Burke et al., 2010). Additionally, goal setting improves cognitive outcomes (Gerani et al., 2020). These include increased motivation (Vidic & Burton, 2010), satisfaction, confidence, interest, and enjoyment (Trenz & Zusho, 2011). Researchers examined the relationship between goal setting and long-term interventions, but further research is necessary to understand the effect of short-term goals on individual exercise sessions (Coppack et al., 2012; Gu et al., 2018; Saajanaho et al., 2014; Trenz & Zusho, 2011; Wilson & Brookfield, 2009). Long-term goals refer to those that are continuously relevant to multiple training sessions over a period of time, while short-term goals refer to those that are relevant only to a single exercise session. In order to improve mental and physical health in the general population, exercise must be enjoyable enough for individuals to adhere to a program long-term (Vella et al., 2017). According to Teixeira et al. (2022), enjoyment positively predicts the intention to continue exercising, exercise frequency, and exercise habit. If short-term goal setting can help to improve the level of enjoyment, individuals may see an increase in mental and physical health, including better performance, greater effort, enhanced cognitive function, and increased motivation.

Increasing goal setting in an exercise program will also enhance one's mental and physical effort (Swann et al., 2020). Therefore, one relationship worth exploring is the effect of goal setting on ratings of perceived exertion (RPE) and performance. Swann et al. (2020) compared the effects of different goal setting interventions on RPE and exercised enjoyment during a six-minute walking test. The goal setting interventions consisted of open goals, SMART goals, “do-your-best” goals, and a control condition. SMART goals are specific, measurable, achievable,

realistic/relevant, and time-bound goals. All experimental conditions had a significantly higher RPE than the control group. Therefore, RPE can be higher when there is a goal setting intervention versus no goal, implying that individuals put more effort into the exercise activity when they have a goal. Hawkins and colleagues (2020) observed the same result in a study, in which the design was very similar, but the participants included both active and inactive adults. These articles support the assumption that goal setting can increase RPE, even across different populations.

Alternatively, Radel et al. (2017) investigated the effects of attentional focus and RPE in response to anticipation of prolonged exercise. In the experimental condition, participants cycled on the ergometer for 60 minutes; however, the researchers stopped it after 10 minutes (the same duration as the control). The participants' focus on the exercise trial declined when informed that the exercise session would last 60 minutes versus 10 minutes. Their reactions demonstrate that they were conserving mental effort. RPE was not statistically significant between conditions; however, there was a higher RPE associated with a higher focus on the task. This indicates that depending on the goals set, one's RPE can increase or decrease based on their anticipation of the level of intensity.

There is a clear gap in the literature where there is little research conducted on short-term goal setting exercise interventions. Therefore, the purpose of the current study was to examine the effectiveness of short-term goal setting on exercise enjoyment, perceived exertion, and performance. The researchers hypothesized that short-term goal setting intervention would increase enjoyment and session rating perceived exertion (sRPE), compared to a control group. If results show that short-term goal setting affects enjoyment, performance, or both, then individuals may have a practical reason to incorporate goal setting in their individual exercise sessions.

## **Method**

### **Participants**

The researchers used G\*Power 3 (Faul et al., 2007) to conduct an a priori power analysis to determine the number of participants using G\*Power 3 (Faul et al., 2007) and determined a necessary sample of 19 participants. A total of 25 participants, ages 18–23 ( $M = 20.8$ ,  $SD = 1.04$ ) including 19 females and 6 males from a university in south central U.S. participated in this study. Each participant confirmed meeting the 150 minutes of moderate intensity or 75 minutes of vigorous intensity weekly exercise recommended by the American College of Sports Medicine (Riebe et al., 2018). Exclusion criteria included if the participant was under 18 years old, did not meet the required amount of weekly physical activity or was unable to perform the rowing task. Each individual signed a consent form indicating an understanding of the risks involved with participating prior to beginning the trial.

### **Task Conditions**

The study included two conditions: a control group and an experimental group. All participants completed both conditions. For the control condition, the participant rowed for a total of four minutes with a five-second break after the first two minutes using the “metrics monitor” setting on the rower screen. Using this setting, the screen displayed distance in meters rowed, power in watts, pace, calories burned, strokes and strokes per minute, heart rate, and elapsed time. For the experimental condition, the participant rowed four minutes total split into two laps of two

minutes each with a five-second break in between them using the “lightning lap” setting on the rower screen. Using this setting, the screen displayed a spaceship that moved around an oval-shaped track at a speed matched to the speed that the participant rowed for two minutes. After two minutes, another spaceship appeared next to the previous spaceship. For the next two minutes, the previous spaceship imitated the speed of the previous lap while the new spaceship simultaneously moved at the same speed as the participant was rowing. The old spaceship served as a pacer, and by rowing faster than it, participants covered more distance during the two-minute bout. Instructions included trying to beat their previous speed and distance each lap, simulating a goal setting session.

## **Instrumentation**

### ***Demographic Information***

Participants answered a variety of demographic questions regarding age, gender, race, and year in college.

### ***International Physical Activity Questionnaire***

This questionnaire helped ensure that participants got 150 minutes of moderate physical activity or 75 minutes of vigorous physical activity weekly.

### ***Task-Specific Motivation Scale***

This scale examined task-specific self-efficacy, task-specific perceived ability, and task-specific motivation using a Likert-type scale ranging from 0 (very low) to 10 (very high) (Hutchinson & Tenenbaum, 2007).

### ***Session Rating of Perceived Exertion (sRPE)***

The scale measured sRPE, which indicates the level of effort a participant subjectively feels in the exercise session. sRPE is a 10-point scale ranging from 0 (nothing at all) to 10 (maximal). The greater the sRPE score, the greater the rating of perceived exertion and subjective effort was for that participant during the exercise session.

### ***The Physical Activity Enjoyment Scale (PACES)***

The PACES addressed ratings of enjoyment during the session. It contains 18 statements such as “I enjoy it,” “I feel bored,” and “I feel physically good while doing it,” which the participants rated on a 7-point bipolar response scale (i.e., agreement or disagreement with the statements). Instructions included to “rate how you feel at the moment about the physical activity you have been doing.” Higher PACES scores indicated greater levels of enjoyment.

### ***The Commitment Check***

This scale measures participants' commitment level and effort investment in the task. Participants reported their commitment and effort investment on a 10-point Likert-type scale ranging from 1 (none/not at all) to 10 (very much/very well) at the end of the rowing task.

### **Procedure**

The Institutional Review Board approved the study prior to any data collection. All participants voluntarily participated in the study. Prior to the study, the participant underwent a COVID-19 symptom screening and signed an informed consent. Each participant completed the study individually to reduce the possible social facilitation effect. First, the participant completed the demographic questionnaire and the International Physical Activity Questionnaire to ensure that the participant was obtaining the minimum number of minutes of weekly exercise.

Next, we collected the participant's height and weight. Throughout the task, the participant wore a Polar H10 heart rate monitor. After sitting quietly for two minutes, we collected the resting heart rate (HR). Next, the participant was introduced to the Aviron Tough Series rower through a standardized video while also practicing rowing. After familiarization, the participant completed the Task-Specific Motivation Scale. Following a randomized crossover design, each participant completed an exercise task under either the experimental or the control conditions during session number one and then switched to the second session 48 hours later.

For both conditions, the participant warmed-up and cooled-down on the rower for three minutes. For the control condition, the participant rowed for a total of four minutes with a five-second break after the first two minutes using the "metrics monitor" setting on the rower screen. For the experimental condition, the participant rowed for four minutes total, split into two laps of two minutes each with a five-second break in between them using the "lightning lap" setting on the rower screen. The participant received instructions to try to beat their previous speed, and distance rowed each lap, simulating a goal setting intervention. The rowing machine measured the distance rowed.

After completing their first round in either condition, the participant rested for five minutes and then set a goal for distance to row in a second trial. Following the rest period on the same day, the participant completed the same condition again. Researchers recorded the participant's post-exercise HR immediately after completion of the exercise task. The researcher recorded the participant's post-exercise HR immediately after completing the exercise task. The participant then completed the sPRE, the PACES, and the commitment check through Qualtrics. After each session, the researcher debriefed the participant and instructed them *not* to discuss the study with any potential participants. Each session lasted approximately 30 minutes for a total of 60 minutes over both sessions.

## Statistical Analyses

Researchers analyzed the demographic information and goal attainment using descriptive statistics. Paired sample t-tests analyzed the HR, PACES, sPRE, and the distance rowed.

## Results

### Manipulation Check

#### *Heart Rate*

Paired sample t-tests analyzed the mean post-exercise heart rate in the experimental condition as compared to the mean post-exercise heart rate in the control condition. The mean in the experimental condition was 175.13 ( $SD = 14.28$ ), and the mean in the control condition was 175.25 ( $SD = 11.79$ ). Researchers found a non-significant difference between the two conditions ( $t(23) = .043, p > .05$ ).

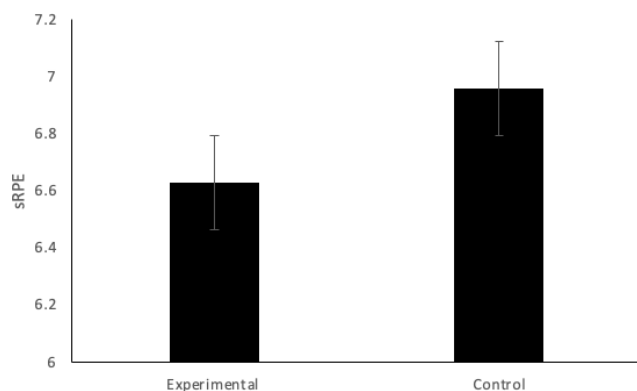
### Task Analyses

#### *PACES*

Paired sample t-test analyzed the mean perceived enjoyment in the experimental condition as compared to the mean perceived enjoyment in the control condition. The mean in the experimental condition was 95.38 ( $SD = 18.51$ ), and the mean in the control condition was 93.71 ( $SD = 16.47$ ). Additionally, researchers found a non-significant difference between the two conditions ( $t(23) = -.749, p > .05$ ; see figure 1).

**Figure 1**

*Mean PACES Score by Condition*

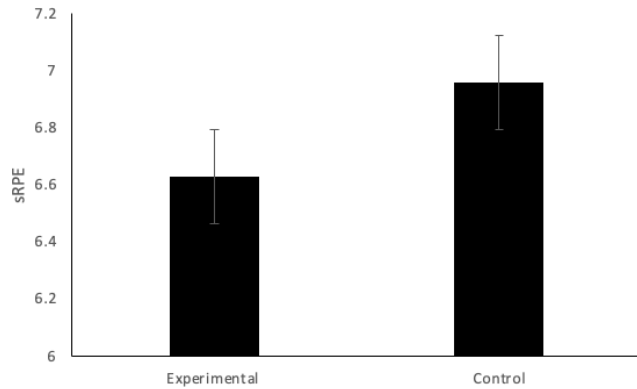


#### *sRPE*

Paired sample t-test analyzed the session rating of perceived exertion in the experimental condition as compared to the session rating of perceived exertion in the control condition. The mean in the experimental condition was 6.63 ( $SD = 1.69$ ), and the mean in the control condition was 6.96 ( $SD = 1.60$ ). Researchers found a non-significant difference between the two conditions ( $t(23) = .984, p > .05$ ; see Figure 2).

**Figure 2**

*Mean sRPE Score by Condition*

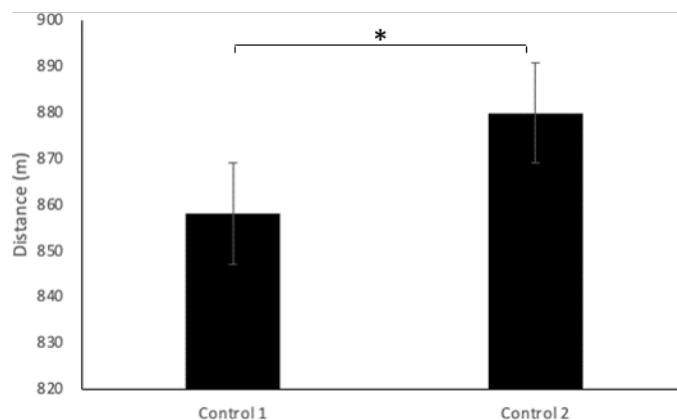


### ***Distance Rowed***

Paired sample t-test analyzed the distance rowed in the first bout of the control condition as compared to the distance rowed in the second bout of the control condition. The mean in the first bout was 858.13 ( $SD = 82.11$ ), and the mean in the second bout was 879.92 ( $SD = 89.20$ ). Researchers noted a significant difference between the two conditions ( $t(23) = 3.587, p = .002$ ; see figure 3).

**Figure 3**

*Mean Distance Rowed in Control Conditions*

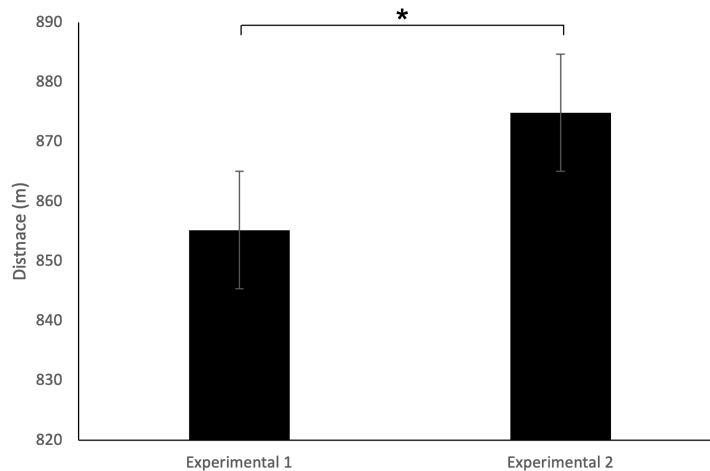


Note. \* =  $p < .05$

Paired sample t-test analyzed the distance rowed in the first bout of the experimental condition as compared to the distance rowed in the second bout of the experimental condition. The mean in the first bout was 855.21 ( $SD = 98.38$ ), and the mean in the second bout was 874.88 ( $SD = 99.03$ ). Researchers found a significant difference between the two conditions ( $t(23) = 2.323$ ,  $p = .029$ ; see figure 4).

**Figure 4**

*Mean Distance Rowed in Experimental Conditions*



Note. \* =  $p < .05$

Using two paired-sample t-tests, researchers reported non-significant differences between the rowing distance in the first exercise bout between the experimental condition and the condition ( $t(23) = .310$ ,  $p > .05$ ) and the second exercise bout between the conditions ( $t(23) = .637$ ,  $p > .05$ ).

### **Goal Attainment**

Descriptive analysis analyzed the frequency of meeting the goal set in the experimental condition as compared to the control condition. In the experimental condition, 11 individuals met their goal (45.8%) while 13 individuals did not meet their goal (54.2%). In the control condition, 14 individuals met their goal (58.3%) while 10 individuals did not meet their goal (41.7%).

### **Discussion**

This study aimed to evaluate the outcomes of short-term goal setting in rowing exercise tasks regarding levels of enjoyment, sRPE, and rowing distance. A repeated measures design developed the outcomes in an experimental and a control condition for each participant. The experimental condition utilized a pacer setting using the “lightning lap” screen on the rowing machine in order to simulate short-term goal setting. The control condition did not include this pacer setting; instead displayed a “metrics monitor” screen. During each of the two sessions in the lab, each participant rowed two bouts of four minutes each, with a five-minute break in between the two. During the break, the participant set a goal for the second bout.



The PACES scale showed no significant difference between the enjoyment during the experimental, compared to the control condition. This was in contradiction to the hypotheses. This indicates that the utilization of the pacer during the exercise task did not significantly increase the enjoyment of the participants. Researchers also found a non-significant difference between the distance rowed from exercise bout one in the experimental condition and exercise bout one in the control condition, or between exercise bout two in the experimental condition and exercise bout two in the control condition. This demonstrates that the pacer used to simulate short-term goal setting during each exercise bout did not produce a significant difference in performance, compared to the control condition without the pacer. The discrepancy between these findings and previous literature exploring the effects of long-term goal-setting and enjoyment and performance may be due to an innate difference in the effectiveness of short-term goals, compared to long-term or the specific type of goal used in this study – the pacer setting. Wilson and Brookfield (2009) found that both process and outcome goals caused significantly higher scores on subscales of the Intrinsic Motivation Inventory, compared to a control group in a long-term exercise intervention. The use of the pacer most closely aligns with a short-term outcome goal, as the goal is to beat the pacer at the end of the exercise bout, instead of a focus on the rowing technique used during the exercise task. Future research should include process goals, as they may be more effective than outcome goals as a means to enhance enjoyment in short-term goal setting.

Interestingly, the researchers found a significant difference between the rowing distance from exercise bout one to exercise bout two in the experimental and control conditions. Short-term goal setting during the break may have resulted in an effect on performance during the five-minute break between exercise bouts. The researchers cannot establish a causal relationship because this goal setting activity was not present in all conditions; however, this is a novel way to study short-term goal setting, and researchers should examine this in future research. If researchers determine a causal relationship, exercise participants should consider setting goals between exercise bouts in order to enhance their performance. This also may provide information about the types of goals exercisers set and their effectiveness, specifically self-chosen goals, compared to the use of a pacer. This may be motivating for exercisers, as a complex pacer or intricate setting may not be necessary in order to enhance performance. It may be the case that simply reflecting on previous performance and setting a goal for yourself is effective enough to improve performance. Gu and colleagues (2018) found that personalized step goals significantly increased physical activity levels (steps taken per class) compared to a control group. These findings are consistent with the significant difference in rowing distance after setting a goal during the break the researchers found in the current study. Each participant set a personalized distance goal based on previous performance, similar to the personalized step goal. Another interesting finding was that it did not actually matter whether the participants met their goal or not, evidenced by the qualitative analysis of the frequency of meeting goals above. In the experimental condition, 45.8% of participants met their goal, and 58.3% of participants met their goal in the control condition. Even with only about half of the participants meeting the goals set, the significant difference in rowing distance from bout one to bout two still existed in both conditions.

sRPE did not differ significantly between experimental and control conditions. This indicates that participants subjectively felt that they were exerting a similar amount of effort during both conditions. Researchers found a non-significant difference for post-exercise HR in the experimental compared to control conditions. This indicates that there was also an objective similarity in physical exertion in the participants across conditions. Borg's (1998) evaluation of the validity and reliability of the scale, which showed that RPE and HR are correlated, supports a

valid measure of subjective effort. Further, Radel et al. (2017) described an association between higher RPE and higher attentional focus on the task. The distracting stimuli of the experimental condition in the current study could potentially have reduced the participant's focus on the task itself. In turn, this reduced attentional focus could have caused the non-significant difference between the experimental condition and lower sRPE scores.

### **Limitations and Future Research**

In the current study, the research only included college students who are active based on the International Physical Activity Questionnaire. Therefore, the generalizability of the study is only to this group. Future research should examine individuals who are sedentary and low-active. Participants were evaluated under two different conditions on two occasions, solely based on their rowing performance. Future research in this field should consider using a training study with multiple days and activities in order to produce more data for each participant.

Additionally, gender ratio inequalities can cause variability in results, as it is possible that goal setting impacts females differently than males. In this case, our study examined a disproportionate number of females, which could have adverse effects on generalizability across genders. Future research should utilize a more expansive list of participants with equal gender ratios or manipulate conditions to compare effects between genders in order to address potential differences. The use of masks due to COVID-19 safety protocols also may have limited the performance ability and comfort of the participants. Future research should find safe ways to ensure comfort during the exercise task. The current study employed goal setting between exercise bouts in all conditions. Future studies should include a condition without goal setting during the break as a control for data comparison. Because the visual and audio stimuli on the "lightning lap" screen during the experimental condition may have been distracting to participants and limited their ability to row faster, researchers should use a less stimulating pacer in the future.

Finally, future studies also may benefit from a pacer that can be set to go faster than the first lap, instead of matching the time of the first lap. Because the ability to clearly view distance rowed in meters on the "metric monitor" setting may have enabled participants to better reach their goal, future research should consider removing this ability by blocking part of the screen.

### **Conclusions**

The data did not support the hypothesis that using a pacer to simulate short-term goal setting would enhance enjoyment, according to the researchers' findings. The sRPE also showed no difference across conditions.

A notable finding was that there was a significant difference in the rowing distance during the two exercise sessions in each situation. This could be because participants set their own targets during the break before the next exercise. It would be worthwhile to conduct further research using a similar design but without the use of goal setting during the break to investigate the effect of goal setting on performance improvement. Exercise participants should be aware of the potential plausibility of self-directed goals, and the usefulness of exercise for improved health outcomes in general (HHS, 2018). Practitioners also should be aware of the utility of incorporating short-term goal setting into sessions with patients or clients and that complex instruments and machines are optional to elevate the quality and successes of their practice.

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### Discussion Questions

1. List two strengths and weaknesses associated with this study. What would you do differently if you were to design a study examining short-term goal setting?
2. What other technology would you use to investigate short-term goal setting?
3. How can practitioners develop exercise adherence using short-term goal setting?

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# **Harmful Beneficence of Psychological Career Assessment Tools for Social Justice and Equity:**

## **A Narrative Review**

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### Abstract

Psychological career assessment in South Africa is intrinsically laden with harmful beneficence that promotes social injustice and inequity. This article emerged from a finding of a desktop study that pointed toward harmful beneficence of career assessment as part of psychological assessment in South Africa. The article highlights that while psychological career assessments may appear as benevolent and protective of society, they also may promote inequity and injustice resulting in harmful beneficence. The article is a narrative review of selected literature not aiming at the empirical, generalizable results. The article attempts to answer the question: How can a narrative review of harmful beneficence of psychological career assessment tools help in bridging the gap between the Afro-Euro-Western worldviews for social justice and equity? The aim of the article is to increase understanding about bridging the gap of the Afro-Euro-Western worldviews through suggesting ways in which harmful beneficence reduces and accommodates less resourced populations to access and benefit from psychological career assessment. Psychological career assessment is inaccessible to the marginalized of most South African populations. *Methods:* A narrative review followed the five steps by Arksey and O'Malley's framework to guide the study. Harmful benevolence policy position emerged as one of the five themes and a serious gap in psychological career assessment. *Results:* This study only focuses on harmful benevolence of psychological career assessment tools from the lens of social injustice and inequity. Lack of non-psychological (culture-language sensitive) testing instruments, and the highly commercialized testing context continue to create a gap in the South African psychological testing context. The article concludes that expansion of participation in psychological career assessment may promote inclusive practices likely to address issues of social justice and equity.

## Keywords

career assessment, harmful beneficence, inequity, social injustice, psychological assessment

## Introduction

Euro-Western psychology birthed psychological assessment in Africa. Most psychologists on the African continent are not trained from local indigenous onto-epistemologies, but from Euro-Western psychology. This marks the beginning of social injustice and inequity, as the assessment instruments in most cases are “biased and lead to discriminatory practices” (Foxcroft, 1997, p. 230). Most assessment instruments are foreign acquired, with very few locally developed and relevant to local populations. For instance, Cockcroft et al. (2015) found that the Wechsler Adult Intelligence Scale Third Edition (WAIS-III) tested different constructs when applied to groups of South African students from low socio-economic contexts and those from British higher economic contexts. This article is not a rebuttal of Euro-Western psychology but fosters “reconciliation, repair, and renewal” (American Psychological Association, 2021, p. 1). It seeks to establish onto-epistemic harmonisation against harmful benevolence that laws that de-emphasise indigenous practices in the field of psychology promote. The context for this study is South Africa, with its history of segregation and subjugation and the contentious role of psychological assessment (Laher & Cockcroft, 2013).

“Psychological testing also known as psychometrics” (Fiske & Adkins, 2017, n.p.) was in use in South Africa as a gatekeeping mechanism against the now historically marginalised populations. Johann M. Schepers, considered the first psychometrist in South Africa, became known as “an expert leader in psychometrics, eminent scholar, gatekeeper [who] occupied the elite role of gatekeeper” (Crous, 2006, p. 3). The essence of gatekeeping is control through the clandestine hand of power. It is critical to reflect on this ‘elite role’ and critique the exclusionary function it serves. The fundamental concern of democracy and inclusion, *quis custodiet ipsos custodes* (who guards the guardians?), remains a challenge in psychological assessment in Africa. Professional bodies demarcate, express, and enforce practice across the scope of practice, often through legislation. Belonging to and registered with professions such as psychology, gives one the exclusionary power over others who are not professionals. Gatekeeping is about “selecting and control of information as it passes through a gate” (DeLuliis, 2015, p. 4). “In making their selections, gatekeepers construct social reality for the gated” (Shoemaker & Reese, 1991, p. 5). Ironically, the constructed social reality might not be the reality for the gated, thus alienating them from their actual reality. In as much as “a gatekeeping right is a necessary condition for gatekeeping power,” it alienates the marginalised majority in the context of psychological assessment (Crombez, Groseclose & Krehbiel, 2006, p. 323).

“Psychological assessment is most useful in the understanding and evaluation of personality and especially of problems in living” (Groth-Marnat, 2009, p. 4). Psychological assessment is also fundamental to professional psychology because “in many ways, psychological assessment is professional psychology’s unique contribution to the wider arena of clinical practice” (Groth-Marnat, 2009, p. 6). Clinical practice is profession-based, specialised, and controlled. Non-psychologists, thus, operate outside the clinical arena. clinically trained psychologists perform clinical practices and assessment for the wellbeing and protection of the



majority. Laher and Cockcroft (2014) characterise psychological assessment as “...highly controversial in South Africa due to past indiscriminate, unfair, and biased use of tests” (p. 303). In response to similar challenges, the American Psychological Association developed the APA’s (2001) “Guidelines for Test User Qualifications [which] were responsive to the identified problem of misuse of tests within the United States and internationally” (APA, 2020, p. 3). In African contexts, clinically trained psychologists qualified to conduct psychological career assessment are in urban areas, but access to services in rural areas is extremely limited. Thus, psychological career assessment provision in countries with large rural populations is inaccessible to most of the population. This raises a question of who, then, do health professions bodies protect through regulations that do not provide alternatives for people who cannot access psychological career assessment due to lack of funds or geographical barriers for psychological services? Is the mandate to protect the public selective? How does the mandate protect the poor and marginalised? These questions alert us to possible harmful beneficence.

There is a distinction between harmful beneficence and harmful benevolence. Both are relevant to this article. “One can say that benevolence is a disposition to be beneficent and that beneficence is what a benevolent person would be or have if he or she had the needed knowledge and power” (Childress, 1982, p. 67). In psychological career assessment, the health professions and the psychologists have the needed knowledge and power. “Benevolence refers to the character trait<sup>19</sup> virtue of being disposed to act for the benefit of others” (Cohen-Almagor, 2017, p. 440). Failure to act for the benefit of the marginalised majority constitutes harmful benevolence as it takes away the character trait virtue through compromised trust. Benevolence can be harmful if only a small proportion of a society’s members benefit from services intended for all members of society (Mohamed & Huhns, 2001), leading to benevolent discrimination (Romani, Holck & Risberg, 2019). “Distinguishing between benevolence as a virtuous inclination and beneficence as a behavior or action differentiates between one’s desire to do the right thing and his/her actual performance in putting that intention into action” (Frankena, 1987, p. 1058). Koutsouvilis (1976) considered “‘benevolence’ as both benevolence (good will) and beneficence (action based on good will)” (p. 428).

Harmful beneficence once present in a mandate of health professions constitutes neglect of “duty of perfect obligation” (Rizzo, 2008, p. 883). Beneficent actions and motives in health-related programmes support the duty of health professions to protect the public. Harmful beneficence emerges when dependence between benefactor and beneficiary seem enveloped in social injustice and inequity. If beneficence is based on free agency of the beneficiary of the health professions to choose freely and have equal access, and on the duty to protect the public if it does not provide alternatives to what it prohibits, then harm is imminent. Rivera (2011, p. 198) succinctly warns that:

When a benefactor fails to understand or respect the larger set of values a beneficiary may have, fails to account for a beneficiary’s fuller conception of her own good, or disregards the wider side effects of her action, the choice of means that benefactor uses are much more likely to undermine the beneficiary’s independently controlled resources. (p. 198)

In the field of psychology, if professional practitioners can provide only psychological career assessment, it would appear socially unjust for those disallowed due to poverty, or

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<sup>19</sup> My own insertion of what I believe to be the correct word.

geographical barriers, or both. The lack of provision of alternatives implicitly constitutes inequity. Some could perceive the health professions council to be reneging on its responsibility for all, through catering only for those who can access services professional practitioners provide. Yet, there are many who need career assessment to make informed decisions, even if it could be alternative, non-psychological. Based on the imperative of a fiduciary relationship between the health professions council and the public, the health professions hold “the position of trust, power, and authority” (Kinsinger, 2009, p. 44). “Beneficence involving dependence” (Rivera, 2011, p. 4), may easily lead to harmful beneficence if trust, power, and authority malevolently exclude, sometimes unintentionally (Kinsinger, 2009). This may corrode the duty of perfect obligation, and therefore become harmful beneficence characterised by social injustice and inequity.

Social injustice and inequity in psychology persisted in post-independence global south. Freire’s (2018) pedagogy of the oppressed reflects the epistemic transformation required in many schools of psychology in Africa. For instance, Ebersohn (2012, p. 800) observed that “higher education curricula expound Western-oriented epistemologies of psychology.” Moletsane (2005) noted the neglect of cultural diversity in psychology while testing and assessment are still more Western and American oriented. Klaver (2017) warns that psychological assessment in South Africa is mostly Western standardised and normed, potentially resulting in inaccurate, invalid test results. Continued use of these tests then is tantamount to promoting social injustice and inequity in the provision of psychological assessment. According to Ebersohn (2012), career assessment instruments emerge from Western ways relevant to their contexts, but not necessarily to the South African context. August and Mashegoane (2021) attest to the challenges of psychology and psychological assessment processes which mostly lack cross-cultural applicability.

Some transformation in the psychological testing space has been taking place through the launching of the inaugural editorial for the *African Journal of Psychological Assessment* (AJOPA) (Laher, 2019). August and Mashegoane (2021) recognise that the practice of psychological testing and assessment requires transformation. Laher (2019) reported that African researchers and practitioners have started developing home-grown assessment instruments. This is laudable as indigenous knowledge systems are underused and not appreciated/recognized in Africa. Conscientization by Cadenas and McWhirter (2022) plays a supportive role in focusing on “critical consciousness” for the field of “vocational psychology to be more responsive to marginalized communities” (p. 411). The encouragement is for “career interventions that respond to oppression and liberation” (p. 411). Flores, Martinez, McGillen, and Milord (2019, p. 189) poignantly note that “...most of the multicultural career intervention literature has been conceptual, with little empirical research assessing the effectiveness of vocational interventions with people of color.” One of these interventions in the South African context is career assessment. Autin, Duffy, and Allan (2017), advocate for commitment to social justice in the field of vocational psychology.

Inclusion is a huge challenge in the field of psychology practice and provision. To what extent is the current practice of psychological testing elitist and therefore exclusionary, especially if it’s only accessible to those who can afford to pay, who speak and read the same maternal language as the psychologist and of the tests themselves, and who do not experience geographical barriers when trying to access such services? Do legislative frameworks enhance or reinforce exclusion by prohibiting and not providing alternatives that address the needs of the marginalised majority? What of the beneficence of psychological assessment? In response, the quote by Shelp (1982) seems to already provide an answer, indicating that:

Some argue that if beneficence is essential to the provider-patient relationship, then a profit-oriented, fee-for-service system is singularly inappropriate, since it often pits the patient's good against the provider's prosperity and nurtures self-regard at the expense of benevolence. Some even suggest that since the patient-provider relationship is properly understood as a beneficent relationship founded on trust, attempts to construe it as a contract, an exchange agreement among equals for mutual benefit, is misguided. Others accommodate less resourced populations to access career assessment. (p. 33)

Based on the dichotomisation of two economies operating in African countries, one epitomising the West and the other in the less resourced countries characterised by poverty and inequality, psychological assessment is for profit making (Laher, 2019). Psychological assessment in the Global South, therefore, must promote corporate social responsibility that enhances rather than marginalises potential beneficiaries. Laher (2019, p. 1) makes a clarion call that, "the interplay between profit-making, negotiations with bigger multinational companies in the Global North, and the ethical responsibility to ensure access to quality assessments across the country and continent makes for discussion not often encountered in current assessment journals." This article encourages addressing harmful beneficence in psychological assessment through legislation that accommodates the needs of most of the population marginalized by poverty, inequality, and geographical barriers by providing for alternative assessment processes by persons who are not psychologists, such as life orientation teachers dealing with career choice. Parents and other significant adults who engage young people on issues of career choice need assistance to guide youth without violating the boundaries of psychological practice. Development of alternative career assessment programmes addressing the career development needs of the marginalised majority is critical (Dobson, Gardner, Metz & Gore, 2014).

Career education and assessment should address transition from school to adult life and the world of work (Stoltz & Young, 2013). Career learning programs are provided in education, training, and youth settings, and in the case of South Africa, are the administrative responsibility of the Department for Higher Education and Training. In the labour market sector, the Department of Labour bears such responsibility. But curiously according to existing legislation, responsibility for psychological acts rests with the Health Professions Council (HPC). Thus, the HPC is currently responsible for filling the gap between benefactor and beneficiary of career assessment. The duty to protect the public and to protect the professional psychologists should not have as an outcome the neglect and further marginalization of the majority of the Global South. Furthermore, indigenous knowledge systems and practices in the field of psychology should be emphasised and built upon (Yang & Lu, 2007).

## **Methods**

This article is a narrative overview, also known as an unsystematic narrative review, considered a comprehensive narrative synthesis of previously published information (Green, Johnson & Adams, 2006, p. 103). In this narrative review, I posit that by law the HPCSA restricts psychological career assessment in South Africa to only registered practitioners. This restriction, while considered beneficent in the eyes of the law, is in fact socially unjust and inequitable as most marginalised potential users of the psychological career assessment tools do not afford or access them (Rawatlal, 2022). In most cases, South African rural school contexts do not have teachers

who are qualified to provide career assessment (Rungqu, 2019). Bemath (2020), also notes “inadequate reliability and validity of (career counselling assessment) tests in the South African context” (p. 2). The narrative review exercise is equally an attempt to support “career training and transforming practice” including psychological career assessment in South Africa (Rawatlal, 2022, p. 2). “Narrative approaches thus allow the researcher to follow their nose” Fan et al. (2022, p. 172), and thus I, followed my instincts as I read and selected articles along the way.

In order to ensure credibility and rigour of the article, I followed the Scale for the Assessment of Narrative Review Articles (SANRA) to guide a narrative review to increase understanding about bridging the gap of the Afro-Euro-Western worldviews through suggesting ways in which harmful beneficence can be reduced to accommodate less resourced populations to access and benefit from psychological career assessment in South Africa. While methods are not mandatory in narrative review, following the SANRA guidelines increased the article’s credibility. Equally, Arksey and O’Malley (2005) methodological guidelines balanced the laissez-faire approach allowed by narrative reviews. I consulted with relevant stakeholders and researchers in the fields of career development and psychological assessment Levac, Colquhoun, and O’Brien (2010) recommended. As some hold that narrative reviews are unsystematic, it is necessary to optimise more logical and focused approaches to strengthen the reliability of studies.

### **Search Strategy**

The scoping review protocol followed the Arksey and O’Malley (2005) methodological guidelines for conducting scoping reviews as below:

#### **Stage 1: Identifying Gaps and Enablers for Non-Psychometric Career Assessments**

Table 1 presents the gaps and enablers for non-psychometric career assessment that emerged from the scoping study.

**Table 1**

*Gaps and Enablers of Non-Psychometric Career Assessment (Sefotho, 2021)*

Gaps	Enablers	Opportunities Identified
Social equity gap	Alternative assessments	Inclusive approaches
Policy silent on services of career assessment	CDS to develop Guidelines	Recommendations for inclusion in policy review
Literature drought that directly addresses career assessment	Research on career assessment	Multi-disciplinary research
No alternative to positivist assessment	Qualitative career assessment	Indigenous narratives
Career assessment test development	Universities and professional bodies	Benchmarking internationally
Career development practitioner mapping	SACDA and stakeholders	SACDA and stakeholders
Career development practitioner standards	SACDA and stakeholders	SACDA’s mandate

## Stage 2: Identifying Relevant Studies

The scoping review was an environmental scan on the use of career assessments in South Africa. The methods involved a search in key journals related to the field of career assessment, namely; *Journal of Career Assessment*, *South African Journal of Industrial Psychology*, *the South African Journal of Psychology*, *the Journal of Vocational Behavior*, *The Career Development Quarterly*, *the Journal of Career Development*, *the Journal of Employment Counseling*, *the International Journal for Educational and Vocational Guidance*, *the British Journal for Guidance and Counselling*, and *the Australian Journal of Career Development*, among others. I systematically reviewed these journals for the scoping exercise.

**Table 2**

*Systematically Reviewed Journals for Scoping*

Author/s	Focus on assessment	Relevance to scoping	Indicators of harmful benevolence
Bemath, N. (2020).	Relevance of the person-environment fit approach to career assessment in South Africa	Career assessment in South Africa	The relevance of this approach in this context is questionable.  Inadequate reliability and validity of tests in the South African context.  Language and socio-economic bias.  Inadequate norms for the South African context.  Alternative approaches to career counselling assessment in South Africa.
Foxcroft, C. D. (1997).	Psychological Testing in South Africa	Psychological Testing in South Africa	The development of a Code of Fair Testing Practice as well as a national test development agenda.
Foxcroft, C., Paterson, H., Le	Psychological assessment in South	The test use patterns and needs of	Perceptions related to the value of

Roux, N., & Herbst, D. (2004).	Africa: a needs analysis: the test use patterns and needs of psychological assessment practitioners	psychological assessment practitioners	psychological tests and testing.  The control and regulation of tests and testing practices.
Laher, S., & Cockcroft, K. (2013).	Contextualising psychological assessment in South Africa	Psychological assessment in South Africa	The role of psychological assessment within this turbulent history was equally contentious.
Laher, S., & Cockcroft, K. (2013).	Current and future trends in psychological assessment in South Africa	Trends in psychological assessment in South Africa	Influx of international tests.  All psychological instruments used on South Africans should be reliable, valid, unbiased, and fair for all groups in the country.
Laher, S., & Cockcroft, K. (2014).	Psychological assessment in post-apartheid South Africa	Psychological assessment in post-apartheid South Africa	Psychological assessment featured as one of the most contentious areas in the history of the country.
Maree, J. G. (2016).	Maree Career Matrix.	Career Matrix.	People's career choices influence virtually every aspect of their lives.
Owen, K. (1998).	The role of psychological tests in education in South Africa	Issues, controversies, and benefits	Tests inappropriate to cultural groups.
Setshedi, M. J. (2008).	Investigating the use of psychological assessment in South African schools	Use of psychological assessment in South African schools	The practice of psychological assessment still operates from the

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			mode of both blaming the learner and finding pathology within the child.
Tredoux, N. (2013).	Using computerised and internet-based testing in South Africa	Using computerised and internet-based testing	Unequal access to computer technology.

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### **Stage 3: Study Selection**

The focus of the scoping review was to systematically investigate the extent of past research on psychological career assessments in South Africa published between 1994 and 2020. This article considers career assessment a sub-group of psychological assessments, specifically focused on the field of careers. A total of 109 unique articles met the criteria from the screening by title, of which 67 were included for full text assessment. Only 30 were included finally for career assessments in South Africa. The researcher further analysed the 30 articles for their relevance through a matrix of popular psychometric career assessments accredited by Health Professions Council of South Africa. The researcher assessed the documents for their administration, availability to the public, whether in Paper (P), Computerised (C), or On-Line (OL) formats. The researcher found only seven career assessment tools to be popular in South Africa. The researcher analysed the reliability and validity of the tests, considering adequate reliability, validity, acceptability among South African users and how each addressed equitability. While some were found to have high internal consistency, some cross-cultural validity, others were found to be not applicable across genders and only one translated into isiXhosa, thus excluding the bulk of other eleven official languages of South Africa. Equitability fared poorly with most career assessment tools showing language problems, not addressing different socio-economic circumstances, excluding previously disadvantaged youths and adults. It is for this reason that Ruggeri et al., (2019) warn that; "... it is critical that the next generation of researchers have the awareness, training, and practice for conducting high-quality research in psychological assessment, particularly when studying across populations, borders, and languages" (p. 1).

### **Stage 4: Charting the Data**

Data charting mirrors data extraction (Khalil et al., 2016). I "synthesized and interpreted data by sifting, charting and sorting material according to key issues and themes" as I induced them from data (Arksey & O'Malley, 2005, p. 26). I created Table 2 as a method of sorting data that organises general information I analysed.

### **Stage 5: Collating, Summarizing, and Reporting the Results**

A two-step approach was used to collate, summarise, and report the results of the study. First, the study question guided the collation, summarising and reporting of results. Second, Levac et al., (2010) encourage that consulting is an "essential component" of scoping reviews. As a researcher for the South African study, I consulted regularly with my European counterpart and

the Career Development Services unit. Engaging the Technical Working Group (TWG) further strengthened the consultation process.

Themes induced from the thematic content analysis of the articles (Davis, Drey, & Gould, 2009) answered the question: How can a scoping review of harmful beneficence of psychological career assessment tools help bridge the gap between the Afro-Euro-Western worldviews for social justice and equity?

These were the following:

- (1) Unclear position of career assessment within the context of psychometric assessment,
- (2) *Harmful benevolent policy position*,
- (3) Uncontrolled online testing,
- (4) Lack of non-psychological (culture-language sensitive) testing instruments,
- (5) Highly commercialized testing context.

### *Quality Assessment*

The Career Development Services unit officials with consultation to other stakeholders conducted the appraisal of the quality of the scoping study. After iterations and strengthening of the methodology, the quality was deemed adequate in line with Levac, Colquhoun, and O'Brien's (2010) encouragement to legitimise the scoping study.

As a measure to quality assure (Levac, Colquhoun, & O'Brien, 2010), requirements for reporting results included three levels of presenting the results of the scoping study to the South African – European Union Technical Working Group (TWG) in two workshops. The TWG deliberated on the study and agreed with the processes and results of the study. The TWG critically engaged with the study as a stakeholder consultation mechanism (Levac, Colquhoun, & O'Brien, 2010). The stakeholders were multidisciplinary and trained in different fields but with a focus on psychological career assessment.

## **Results**

This article presents only theme two (Harmful benevolent policy position). Indicators of harmful benevolence as gleaned from different articles underpinning the main theme of this article support a harmful benevolent policy position. Harmful benevolent policy position within the South African society is indicative of marginalisation of the indigenous people (Oppong, Brune, & Mpofu, 2020). Benevolence “encompasses the notion of power inequalities...benevolence is a desire to do good, simultaneously imposing (on the recipient) a worldview of what is desirable” (Romani, Holck, & Risberg, 2019, p. 374).



**Theme:** Harmful benevolent policy position

**Table 4**

*Indicators of Harmful Benevolence*

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- Indicators of harmful benevolence
  - The relevance of this approach in this context is questionable.
  - Inadequate reliability and validity of tests in the South African context.
  - Language and socio-economic bias.
  - Inadequate norms for the South African context.
  - Alternative approaches to career counselling assessment in South Africa.
  - The development of a Code of Fair Testing Practice as well as a national test development agenda
  - Perceptions related to the value of psychological tests and testing.
  - The control and regulation of tests and testing practices.
  - The role of psychological assessment within this turbulent history was equally contentious.
  - Influx of international tests.
  - All psychological instruments used on South Africans should be reliable, valid, unbiased, and fair for all groups in the country.
  - Psychological assessment featured as one of the most contentious areas in the history of the country.
  - People's career choices influence every aspect of their lives.
  - Tests inappropriate to cultural groups.
  - The practice of psychological assessment still operates from the mode of both blaming the learner and finding pathology within the field.
  - Unequal access to computer technology.
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### **Discussion**

Harmful benevolent policy position is the theme of this article. Indicators of harmful benevolence anchor its discussion. Relevance of the person-environment fit to the South African society is questionable because it lacks acceptable cultural relativism (Oppong, 2019). Thus, Johnson and Van Schalkwyk (2022, p. 2), admonish “to re-conscientize and re-Africanize a de-Africanized continent, prioritizing people,” especially the marginalised majority who are further marginalised by profession led gatekeeping in the field of psychology. South Africa is a rainbow nation with multiple cultures. The environment to South Africans may not be confining to groups of people but should accept people from a multiplicity of cultures. The inadequate reliability and validity of psychological tests in the South African context is a challenge to date scarcely addressed by the psychology profession. The instruments suffer mostly from cultural origins, language, and accessibility issues. South Africa boasts of 11 official languages. The psychological career assessment instruments if approached from a positivist way of confining ontology to measurement, do not accommodate all these languages nor the diversity of cultural constructs contained within these languages. There also appear to be inadequate norms for foreign constructed tests for use in the South African context. Access to such instruments is limited to those who can afford to pay for them and to those living in urban areas, thus depriving most of the population of any benefit that

such instruments could bring. It, therefore, is imperative that alternative approaches developed for the provision of career counselling assessment in South Africa address the epistemic gaps created by the historic context of psychological assessment.

Foxcroft (1997) encouraged the development of a Code of Fair Testing Practice as well as a national test development agenda. If fair testing practice implies being inclusive in the true sense through removing harmful benevolence, then this would be a step in the right direction. Fair practice would address the social injustice and inequity brought about by the marginalisation of the majority of South Africans who have scarce resources. Improved perceptions related to the value of psychological tests and testing are imperative. South African society needs to be well informed and conscientized about psychological testing to make informed decisions about the tests. Currently, the play of power relations favours the psychology profession. The control and regulation of tests and testing practices seems to suggest that transformation of psychological assessment is inevitable (Foxcroft, Paterson, Le Roux & Herbst, (2004). While the role of psychological assessment within this turbulent history was equally contentious, current transformational developments are encouraging.

Supporting and promoting the growing crop of domestically developed tests will provide a welcome alternative to tests developed in and for populations in other countries. A DHET policy aim should be that all career assessment instruments used on South Africans should produce reliable, valid, unbiased, and fair results for all groups in the country and society (Laher & Cockcroft, 2013). The development of non-psychological assessment instruments could be pivotal in this regard. Less gatekeeping also could open the space and encourage the embracing of career assessments by society. The processes to “re-conscientize and re-Africanize a de-Africanized” psychological assessment, one of the most contentious social science applications in the history in South Africa, will be a protracted process (Johnson & Van Schalkwyk, 2022, p. 2). First, dealing with the influx of imported psychological assessment instruments and their supporting commercial lobby may be tricky. Second, changing the social mindset and attitude to psychological testing, as an instrument of apartheid, may be difficult. Third, it may not be easy to promote the social responsibility of test developers for access of the tests.

According to Setshedi (2008), “the practice of psychological assessment still operates from the mode of both blaming the learner and finding pathology within the child.” Meaningful inclusion needs to discard archaic and pathologizing by psychological assessment. Psychological assessment viewed as promoting well-being, should not be pathologizing. The use of online or computerised tests although desirable, does not of itself guarantee equal access. Most rural areas still lack opportunities for easy access to broadband, internet, and computers, albeit the use of cellular phones is increasing.

A new generation of psychological and behavioural scientists needs to develop alternative psychological career assessment methods driven by equity action plans for inclusive practice (Canady, 2022). Sefotho (2021) suggests ethno-qualitative career assessment tools. This is to counterbalance what Mkhize (2018) cautions against as, “The discipline of Psychology’ [s]...over-reliance on Western philosophical pre-suppositions about what it means to be a human being” (p. 25). The alternative psychological career assessments bench-marked on “Qualitative career assessment [emerge] ...as ‘informal forms of assessment’” (McMahon et al., 2005, p. 476). Narrative approaches inherent to African societies resonate with the work of Savickas et al. (2009), using individual career stories to construct careers. Games also could bench-mark the development of alternative career assessment tools already used as a form of therapy (Hadebe-Ndlovu, 2022). The My Systems of Career Influences (MSCI) by McMahon et al. (2005) domesticates and adapts

systems already working in communities to involve critical stakeholders such as friends, family, and elders. The need to be inclusive should define life in the 21<sup>st</sup> century. Psychological career assessment also should be inclusive to promote sustainable development goal 8: Decent work and economic growth for all.

### **Contribution to the Field Statement**

This is a call for the transformation of psychological career assessment provision in South Africa. The development of non-psychological, alternative career assessment instruments must address harmful beneficence towards less resourced populations through existing psychological assessment provision. Life Orientation teachers and other key stakeholders guiding the marginalised youth of South Africa, have no tools to use outside those prescribed for registered professionals. This article calls for inclusive practices in the field of psychological career assessment in its entirety. It is a drive toward social justice in a country with historical systematic discrimination.

### **Limitations of the Study**

The current study has potential limitations emerging from its methodology. Based on a scoping study approach, the study has empirical shortcomings that do not allow generalisations of results. Two reviewers do data charting in scoping reviews. However, in this commissioned study, only the appointed researcher conducted the study. To fill the gap of one reviewer, the Technical Working Group (TWG) served as a sounding board for the researcher. The results of this study, therefore, considered some limitations.

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### Discussion Questions

1. How could re-conscientization, re-Africanization, and a de-Africanized continent help quell harmful beneficence of psychological career assessment in Africa?
2. In what ways could the epistemic gaps identified address linguistic discrimination in the development of career assessment instruments?
3. What innovative ways could reach most rural areas still lacking opportunities for access to e-career counselling?

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# **Unraveling the Mystique of Mathematics for First-Year Students**

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## **Abstract**

What kinds of experiences provide opportunities for constructing knowledge about a brand-new concept? How can mathematics teachers ensure that these experiences minimize the anxiety level of their students? For first year college students and those who represent traditionally underserved minorities, the anxiety can be even more pronounced (Sagona, 2003). How can mathematics teachers tap into the diverse intelligences of their students in order to exploit the construction of that knowledge (Ashcraft & Kirk, 2001)? In this article, we will address and discuss these questions. The implications are far reaching and have the potential to benefit all mathematics students.

## **Keywords**

math anxiety, multiple intelligence theory, constructivism

## **Theoretical Rationale**

One of our primary duties at the teaching-focused university where we work is to teach introductory level mathematics classes comprised of many first-year students. The content of these mathematics courses consists of the theories and applications of elementary statistics, algebra, and calculus. Many of the students represent traditionally underserved populations. The students in

these classes are typically first year college students coming from a diverse array of sociodemographic backgrounds.

Students who are new to the discipline of college level mathematics may find much of the course content to be foreign to their own repositories of prior knowledge. One of our goals, therefore, is to help the first-year students who take this course to establish vivid schemes containing key elements of mathematics.

Luttenberger, Wimmer, and Paechter (2018) note that math anxiety pervades the teaching-and-learning environment to the extent that as many as 93% of adult U.S. learners experience at least a modicum of math anxiety, and its impact on achievement negatively influences examination performance and classroom behavior. The findings of Finlayson's (2014) study amplify this observation, which reported on the pervasiveness of math anxiety and its impact on achievement; however, a simple mitigation strategy – recognition of the problem – helps to weaken anxiety's blocking effect on learning outcomes. Recognizing the problem as a means for reducing anxiety is what Wang and others (2018) conclude. They point out that learners who take ownership of their decisions to select a particular mathematics class acquire agency to succeed, because they view their decision as a personal investment. Readers will find how this sense of ownership materializes through active participation in the learning process illustrated below.

Our efforts at reducing math anxiety reside in the premise that learners are most likely to succeed when they apply the kinds of intellectual processes with which they are most comfortable. Therefore, we design our classes and structure their activities around a multitude of ways for students to demonstrate skill development and conceptual mastery. These activities stem from the premises of multiple intelligence theory (MIT). Gardner's (1983) theory of multiple intelligence posits seven distinct intelligences, operating as a complex information processing and problem solving system. These intelligences are spatial, verbal, body and kinesthetic, logical and mathematical, interpersonal, intrapersonal, and musical and rhythmic. Of the approximately 90 percent of students who complete the courses we teach, roughly 90% do so with a grade of "C" or better. This outcome stands in stark contrast to the conventional, didactic classroom rate of achievement, in which it is not uncommon to have pass rates as low as 58% (Robinson Papers, 2006).

Each type of learner in our classroom, regardless of linguistic or cultural background, receives the curriculum in multiple ways, and has multiple opportunities to demonstrate the skills they have acquired (see examples in the Discussion section below). The atmosphere we create fosters the opportunity to deal with new content on several levels (Banks & Banks, 1989). These levels range from the simple – e.g., understanding basic mathematical concepts within the context they were originally presented, to the complex – e.g., synthesizing two concepts and using this synthesis to solve a problem unlike any they have seen before.

### **Theory to Practice**

We model contemporary practices in our lessons by engaging students' multiple intelligences (Gardner, 1983). Gardner's (1983) theory emphasizes authenticity in scheme construction. Students utilize their intelligences in music, linguistic skills, mathematics, personal and social interaction, individual movement, and spatial relations. Now students have a seven-fold opportunity to organize their learning process scheme in a manner that can be accurately assessed.

## **The Mathematics Classroom**

We utilize several key components in building a mathematics classroom where first year learner can feel comfortable (minimizing anxiety), utilize their multiple intelligences, and have various opportunities to demonstrate mastery of the content. In doing so, we do not limit ourselves to the traditional lecture or skill and drill styles of mathematics education. We now discuss the important components involved in developing a mathematics classroom that friendly to first year learners of all ability levels and background.

### **Classroom Activities**

First, we discuss some classroom activities. Many of our activities emphasize two or more of the seven intelligences identified in Gardner's Multiple Intelligence Theory enabling our students to process complex information, to formulate coherent hypotheses, and to arrive at accurate conclusions (Gardner, 1983). (Note that not all of these activities have been used during COVID-19 times).

#### ***Example 1 – Mathematical Functions***

Approximate duration: 20 minutes.

Intelligences emphasized: body and kinesthetic, spatial, interpersonal.

Content: introduction to relationship between mathematical functions and graphs.

Procedure: Students become the points on a graph. In order to do this, we go outside, locate a flat, open space, and select one student as the function. Remaining students are assigned "x-values." The student who plays the role of the function assigns each classmate an "f(x) value," according to a predetermined "x-value." That student takes the appropriate number of paces along both the x and f(x) axes of an imaginary graph drawn in the open space until reaching the points on the graph.

Expected outcome: students will be able to graph linear functions accurately on paper.

#### ***Example 2 – Mathematics as a Second Language***

Approximate duration: 15 minutes.

Intelligences emphasized: verbal, logical and mathematical, intrapersonal.

Content: mathematical statements.

Procedure: Mathematical statements are treated as if they convey meaning in a language that is new. Students are paired and instructed to "translate" seemingly complex mathematical statements into English by analyzing the statement, isolating its individual, parts, and formulating an English language expression that conveys the statement's meaning. For instance, the mathematical statement  $f(x) = 7x - 9$  can be translated as "I've got a mathematical machine called 'f.' This machine's job is to take whatever I give it, multiply it by seven, and subtract nine from that."

Expected outcome: students can express orally and in writing the meaning of a mathematical statement.

### ***Example 3 – The Two-Minute Drill***

Approximate duration: 30 minutes.

Intelligences emphasized: spatial, intrapersonal, interpersonal, body and kinesthetic, musical and rhythmic.

Content: mathematical and statistical concepts.

Procedure: Students are instructed to take no more than two minutes to sketch an illustration of their understanding of mathematical and statistical concepts, for instance, correlation. Following their completion of a paper and pencil portrayal of the concept, students are directed to stand in unison and exchange on signal their sketching with the classmate next to them. Following the exchange, students return to seated positions, and thirty seconds are allotted for the classmate to examine the concept portrayal and to write any comment about what is pictured. The 30 second exchange procedure makes the rounds of the classroom until the concept portrayals return to their originators. During each thirty second interval, students are asked to make additional remarks, question prior comments, or pass. Typically, the exchanges grow faster and faster as classmates observe similarities between previous comments and their own observations. When the exchange process ends and the concept portrayals return to their originators, they are asked to synthesize their classmates' comments and to refine their understanding of the concept by incorporating classmate feedback. These new conceptualizations are shared with the class and validated by the instructor.

Expected outcome: students will be able to identify and describe the purpose of a mathematical or statistical concept such as "correlation."

### ***Example 4 – Drag-Strip Graphing***

Approximate duration: 25 minutes.

Intelligences emphasized: spatial, interpersonal, verbal and linguistic.

Content: visual displays of data such as histograms.

Procedure: Groups of three are assigned the task of constructing a histogram on paper, for instance a histogram of peoples' heights. Each group cuts a different strip from their histogram, for example the strip representing the frequency in the 55–60 inch. These cut strips contain individual portions of a whole histogram. At the conclusion of the group process, all of the groups' strips are connected until a single finished product is configured to resemble the entire histogram. In other words, each group deconstructed their histogram and the class as a whole reassembled the portions into a whole histogram.

Expected outcome: students will explain to each other the elements of a histogram and construct as a class an example of a histogram.

### ***Example 5 – Enrichment Activities***

Approximate duration: variable (performed outside of classroom).

Intelligences emphasized: verbal and linguistic, intrapersonal, logical and mathematical.

Content: parameters and statistics.

Procedure: Early in the semester of introductory statistics classes the instructor informs students that parameters are typically assigned Greek alphabet letter names while statistics are typically assigned Latin alphabet letter names. Students investigate the origins of these alphabets and maintain a checklist of the terms' linguistic origins. As their knowledge of concepts in parameters and statistics grows, accordingly does their checklist. Students acquire a familiarity with statistical nomenclature and, in the process, gain an appreciation for language and the interrelationships between languages.

Expected outcome: students will demonstrate their growth in statistical literacy by discussing the linguistic origins of parameter and statistical terminology.

The examples and adaptations above illustrate how students have the opportunity to learn mathematics in many different ways. This allows each student, no matter what type of learner she or he may be, to absorb the material in whatever way is most natural for them. The utilization of multiple intelligence theory in our classroom has a twofold affect. First, the inclusive and relaxed setting that exists in our multiple intelligence oriented classroom reduces the level of math anxiety that our students experience. The concept of math anxiety is a complex one, involving multiple variables (Wand et al., 2018). Attending a new school and experiencing lessened parental supervision may compound the sensation of math anxiety among first year students. Second, our students more readily master the concepts and applications within the course by using a wide variety of their intelligences. No longer is the mastery of quantitative methods the sole domain students who are gifted with great mathematical-logical intelligence.

The two outcomes above do not occur in isolation of each other. A feedback loop exists between the two. The reduced level of anxiety allows students to utilize more effectively each of their intelligences, while the activation of many different intelligences reduces our students' anxiety levels.

### **Mastery Learning**

We believe that taking a mastery learning based approach to mathematics instruction not only reduces the anxiety level of our first-year students (most of whom do not intend to major in mathematics), but also increases their ultimate level of achievement. The extant literature (Slavin, 1987) supports this notion of mastery learning leading to improved student achievement in mathematics. In particular, we do not see mathematics exams as the end of a conversation but, rather, as the middle of a conversation with our students. Upon receiving their graded exams back, our students have the opportunity earn back some of the points they may have lost by doing the following: (1) explaining, in words, any mistakes they may have made, and then (2) making corrections to any answers they got wrong while showing all work. This process engages both the logical mathematical intelligence of our students as well as their verbal intelligence.

## **Real Life Examples in Real Time**

One of the primary concerns of first year mathematics students is that the material they are learning has no relevance to their own lives. In order to make our course material as relevant as possible to our students, we encourage our students to come up with their own examples for classroom discussion (or, at least, to come up with the general topic for these examples). This method works well in all our introductory level math classes, works especially well in statistics and has been shown in the literature (Yilmaz, Altun, & Olkun, 2010) to positively affect students' attitudes towards learning math.

### ***Example 1***

Course: Introductory Statistics.

Topic: Conditional probability.

Goal: Help students to internalize what it means to find the probability of event A given that event B is known.

Procedure: Students are first asked to choose two topics of interest to them. Recently, students chose the events of whether a student is a commuter (C) and whether they are a nursing major (N). Note that we only allow topics that students should all feel comfortable discussing and give students the opportunity to opt out of sharing their data with the class for any reason. Given these constraints, our goal is to find the probability that a student is a commuter given that they are a nursing major or, in statistical jargon,  $P(C|N)$ . Next, we ask all of the nursing students to go to one side of the classroom (since it is a *given* that the student we are dealing with is a nursing major). Then, we ask the nursing majors *only* to raise their hand if they are a commuter. We then, as a class, calculate the probability of being a commuter given that one is a nursing major by dividing the number of raised hands among the nursing majors by the total number of nursing majors. This example applies statistics to an area of students' interest and utilizes both their mathematical and bodily and kinesthetic intelligences.

### ***Example 2***

Course: Applied Calculus.

Topic: Derivatives.

Goal: To find the rate of change of a function.

Procedure: Again, students are asked to choose a topic of interest to them. One example students have demonstrated interest in historically is credit card debt. The instructor provides a simple mathematical function to model credit card debt (in dollars) as a function of time (years). Students as a whole class use the elementary methods of calculus to find the derivative of this function, which tells them how quickly credit card debt is growing over time. Students are often surprised to find how quickly this debt piles up, and it is our hope that our students take this lesson to heart.

## Discussion

In this article, we have presented a model for a first-year student friendly mathematics classroom. The modes of instruction we utilize include addressing our students' multiple intelligences, mastery learning, and the use of student-initiated examples, applications, and data. The preceding methodology has created an environment where, based off of student comments and evaluations, our first-year students feel comfortable, engaged, and relatively anxiety-free. Additionally, we see a relatively high pass rate among our students in these classes. We encourage mathematics faculty who teach first year students to consider implementing some of these methods in their own classrooms. We also encourage first year students to actively participate in their mathematics classes, to apply mathematics to all things that interest them, and to see mathematics as more than a set of memorized formulae.

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#### Discussion Questions

1. What does the instructor already do to recognize math anxiety?
2. How can the instructor integrate these kinds of activities into the instructor's institutional assessment policy?
3. When are optimum times in the semester for the instructor to implement these kinds of activities?

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# **The Moral Plausibility of Utilitarianism in Business through the Lens of Christian Ethics**

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## **Abstract**

Individuals and societies have long made decisions through the use of utilitarianism – an ethical theory that determines the morality of an action based on its consequence of producing the greatest good for the greatest number of people. An evaluation of the plausibility of this theory as a moral standard in doing business, though, revealed that it is inconsistent with the higher moral order based on biblical principles. While utilitarianism holds that the maximization of pleasure or happiness, or the minimization of pain or unhappiness among the affected people results to the greatest good, the Bible qualifies that true happiness is in God alone and states that suffering will end only upon humanity's full redemption. Nevertheless, God can use the same suffering to realize God's desirable purposes. Likewise, the tendency of utilitarian practice to sacrifice the rights and welfare, or even lives, of the minority for the happiness of the majority does not reflect God's character and violates the inherent dignity of each person as bearing the likeness and image of the Creator. With these arguments, the author recommends that people and organizations use other ethical approaches such as Christian ethics in place of, or in combination with, utilitarianism.

## **Keywords**

utilitarianism, greatest good, greatest number, ethics

## **Introduction**

Since its introduction by Jeremy Bentham (1748–1832) and John Stuart Mill (1806–1873), utilitarianism has served as one of the most influential schools of moral thinking in business, economics, politics, government, and other institutions. Bentham (1789) developed utilitarianism as an ethical philosophy that anchors morality on an action's potential to generate the greatest good for the greatest number of people. He defined the greatest good as the maximization of pleasure or happiness, or the minimization of pain or unhappiness, or both. Based on his hedonic calculus, any

action that provides the greatest net pleasure, or the difference between pleasure and pain, is the most moral action. He proposed the measurement of pleasure and pain using seven variables, namely (1) intensity, the magnitude of pleasure or pain; (2) duration, the length of time that the pleasure or pain is expected to last; (3) certainty, the likelihood that the pleasure or pain will last; (4) propinquity, the proximity in time when the pleasure or pain is to be experienced; (5) fecundity, the likelihood that pleasure will produce more pleasure and pain will produce more pain; (6) purity, the quality of pleasure to be free from pain, and of pain to be free from pleasure; and (7) extent, the number of people who will feel the pleasure or the pain.

Mill (1863) built upon the works of Bentham to further develop the utilitarian theory. His emphasis was on making utilitarian decisions for society as a whole, rather than for individuals only. He believed that not all pleasures are the same; those pertaining to the mind were higher-order pleasures, while those pertaining to the body were lower-level pleasures. He also advocated that people respect the personal freedom and individual rights of other people seeking their own pleasures as long as these individuals do not harm others. While business and economic organizations, through the years, have applied utilitarianism extensively in their operations, this philosophy's core principle, "greatest good for the greatest number," appeared to be problematic from the Christian perspective. The rest of this article discusses why this was so.

## **Review of Related Literature**

### **Studies on Utilitarianism**

There is a division in secular literature insofar as its evaluation of utilitarianism as an effective moral standard is concerned. Marseille and Kahn (2019) found utilitarianism to be a reliable ethical framework for allocating scarce resources to maximize health-related benefits in an African country with a high prevalence of HIV. Using a utilitarian-based cost-benefit analysis, they showed that governmental spending targeted at distributing more male rather than female condoms could help reduce HIV infections and thus save more lives. In another study, Veenhoven (2010), after conducting empirical research on life satisfaction, concluded that utilitarianism as a philosophy that promotes happiness is practically feasible and morally sound. He analyzed data from the World Database of Happiness and concluded that happiness – the overall enjoyment of one's life – is both measurable and increasable, thus giving institutions no valid reason to denounce happiness as insignificant. He concluded that happiness can be a good answer if people were to search for a desirable end-value.

In conducting an extensive review of related literature on utilitarianism, Parijat (2015) found both merits and drawbacks in the philosophy. He described utilitarianism as "simple, straightforward, practical, and based on equality and common sense" (p. 34). However, he also found that this ethical standard neglects other morally desirable aspirations, is difficult to implement, does not differentiate between the pleasures that individuals derive from a common outcome, presents difficulties in quantifying levels of pleasures and pain, and ignores other noble virtues such as devotion and sacrifice. In another paper, Mukerji (2013) criticized utilitarianism for its lack of compatibility with intuitive moral judgments, consistency, completeness, and conceptual clarity. He claimed that many of the arguments supporting the theory were unsound or questionable, thus he proposed the rejection of classic utilitarianism as a general theory of morality. Weiss (2019), in contrast, found issues against the utilitarian concept of the greatest good – the definition of good, the decider of what is good and what is not, the criteria of what makes the

consequence of a decision better than another, and the group whose interests are prioritized over others in decision-making. To these concerns, Narens and Skyrms (2020) added the question of scope – how far into the future one has to look at in identifying the people a particular action affects.

Zeroing in on the measurement of utility – of the comparison between happiness and unhappiness – DeGeorge (2011) asserted that some non-economic goods like life, freedom, equality, health, beauty, grace, and faith have values that are hard to measure, making utility comparisons and trading difficult. In addition, Dietz (2019) asserted that even when pleasure or happiness becomes precisely measurable, there is the possibility of the paradox of hedonism coming into play, with the pursuit of happiness for its own sake potentially becoming self-defeating due to human incompetence in predicting what will make them happy, or to the non-availability of special goods that provide the greatest pleasures.

On the incompatibility of utilitarianism with issues of justice and human rights, Gesang (2005) found problematic the utilitarian practice of judging the rightness or wrongness of an action based on its consequences, and not on the action itself. Accordingly, justice depends not on consequences, but on giving each person what is due him or her, insisting that decision-makers should not sacrifice the rights of the minority for the happiness of the majority.

## **Utilitarianism in Action**

### ***Utilitarianism in Business and Economics***

Locke et al. (2021), Kahane et al. (2015), Sheskin and Baumard (2016), Cleveland (2000), Dale (2020), and Mack (2004) all reported the failure of the utilitarian standard and other secular ethical theories to serve as effective guides to ethical business behavior. Unethical practices, such as lying about the true financial condition of companies, false advertising, marketing of defective products, unfair competition, bribery, impingement on intellectual property rights, malversation or misuse of funds and other company resources, theft, tax evasion, discrimination, harassment, nepotism, favoritism, poor working conditions, abuse of authority, violations on data privacy, violations of labor standards, violations of consumer rights, and destruction of the environment continue to prevail in society. In the United States, Ivcevic et al. (2020), in an article they published in the *Harvard Business Review*, reported that, based on a national survey of more than 14,500 employees across industries, 23 percent felt a certain amount of pressure in their workplaces to do things they knew were wrong. The study reported that respondents witnessed, in varying proportions, several ethical failures in their respective places of work, including rule violations (29 percent), lying (27 percent), unhealthy work environment (27 percent), sacrificing safety (9 percent), discrimination (3 percent), stealing (3 percent), and bullying (2 percent).

On a grander scale, Gordon (2022) reported that in 4,762 surveys involving board members, senior managers, and employees in a sample of the largest companies and organizations in 54 countries and territories worldwide:

- (1) 41 percent of respondents (and 54% of surveyed board members) said that the COVID-19 pandemic has made it more difficult to carry out business with integrity.
- (2) 18 percent of all surveyed board members said that they are prepared to mislead external parties such as auditors or regulators to improve their own career progression or remuneration.

- (3) Only 28 percent of employees are confident that third parties abide by relevant laws and regulations.
- (4) Only 33 percent of respondents believe behaving with ethical standards is an important characteristic of integrity; and
- (5) 42 percent of surveyed board members agreed that unethical behavior in senior or high performers is tolerated in their organization.

Modern business is replete with cases that showed the application of utilitarianism in some important decisions that companies and institutions made in the past. I have summarized here two cases to illustrate how the use of the utilitarian ethic has impacted the lives of people in two different situations: (1) in a company's decision to produce and market a vehicle despite an impending government regulation that puts its safety capability into serious question; and (2) in hospitals' decisions regarding the assignment of ventilators at the height of the COVID-19 pandemic. Shaw and Barry (2015) reported on the first case, the Ford Pinto. Accordingly, in 1968, the Ford Company decided to manufacture the Ford Pinto vehicle as a strategic response to foreign-made cars that other countries then were aggressively exporting to the United States. Pressed with time to compete with these foreign brands, the company's production department resolved to shorten the product development cycle time from the usual three and a half years to two years. Thus, the company developed prototypes in record time. Coincidentally, it was by then that news broke about the plan of the U.S. National Highway Traffic Safety Administration (NHTSA) to prescribe, by 1972, a new safety standard requiring that all new vehicles be able to withstand a rear-end collision impact of 20 miles per hour without fuel loss. Anticipating the implementation of this new standard, Ford crash-tested its Pinto prototypes, only to find out that many of the units failed the test. Many of the prototypes suffered from ruptured gas tanks and leaks, thereby posing fire hazards. At this point, Ford could have redesigned its gas tanks to make them safer; however, it chose not to do so. Rather, the company launched the Ford Pinto vehicle in its original design and left it unchanged for the next six years. It reasoned that based on cost-benefit analysis, it would be more costly than beneficial for the company to introduce the suggested design changes. It estimated that the potential cost of improving the vehicles' gas tanks was \$137.5 million for 11 million cars and 1.5 million light trucks. In exchange for this cost, Ford's benefit was expected to be in the form of the \$49.5 million savings that the company can enjoy in not paying for an estimated number of 180 burn deaths, 180 serious burn injuries, and 2,100 burned vehicles that may result from accidents associated with the use of cars with unimproved gas tanks. Between 1971 and 1978, following the launching of the product, the news media reported several fire-related deaths attributed to the use of the vehicle. In addition, victims of rear-end accidents or their representatives filed about 50 lawsuits against the company. The company paid millions of dollars to accident victims for compensatory and punitive damages, and in 1978, the Government ordered the recall of all Ford Pinto units manufactured from 1971 to 1976 for the modification of their defective fuel tanks. Ford used utilitarian calculus in determining what would promote the greatest financial good for its stockholders, but its decision led to the loss of lives, body injuries, and burned or damaged vehicles, not to mention the huge amounts of compensation the company paid to aggrieved parties or their survivors and the negative impact all the mess has created for the firm's reputation.

In the second case, Savulescu, Perrson, and Wilkinson (2020) reported that at the height of the COVID-19 pandemic, frontline workers in the healthcare industry faced the very serious challenge of making decisions to allocate scarce hospital resources to critically ill patients who

needed them. Notable among these resources were the ventilators, which, to many of those who were severely sick with COVID-19, made the difference between life and death. To aid health workers make objective decisions on who gets a ventilator and who does not, many hospitals used a triage that was based on such criteria as (1) probability of recovery, with those patients having a higher probability of recovery receiving a higher priority over those patients with lower probability; (2) expected length of life after COVID-19, with those predicted to live longer lives after recovering from COVID-19 prioritized over those predicted to live shorter lives; and (3) quality of life after COVID-19, with those patients predicted to have a better post-COVID-19 quality of life given preference over the other patients predicted to live a poorer quality of life, even after recovering from the disease. Obviously, this triage was premised on utilitarian reasoning. It sought to save and prolong the productive lives of the greatest number of people in an emergency situation where resources are scarce; however, it sacrificed the interests of others or even their lives.

### ***Utilitarianism in the Bible***

Long before utilitarian ethics found its way into modern business and economics, some Bible characters already had applied it in some key decisions they made. Below, I have summarized three sample stories of this nature: (1) that of a king who thought that protecting his people from invaders and promoting their welfare at all cost was the greatest good, and (2) that of a father who considered saving his heavenly guests from molestation as the greatest good, even when his daughters could face potential harm, and (3) that of the high priest's recommendation before the Sanhedrin to kill Jesus. Their inclusion in the Bible does not, in any way, endorse their decisions. As Paul wrote, "For whatever was written in former days was written for our instruction so that by steadfastness and by the encouragement of the scriptures we might have hope" (Romans 15:4).

**King Asa's Alliance with the King of Aram.** 2 Chronicles 16:1-14 recorded this story. Asa was king of Judah at the time when Israel had Baasha as its king. In the 36th year of Asa's reign, Baasha invaded Judah and started building a fortress city named Ramah. The fortress, which was near the boundary of Judah and Israel, was intended to prevent the entry or exit of anyone to and from Judah. Assessing that Judah's military power was much weaker, compared with that of Israel, Asa sought the support of another kingdom, Aram, in resisting the Israelites. To win the favor of Aram, Asa took gold and silver from the house of the Lord and presented them as gifts to Ben-Hadad, Aram's king. This gesture resulted in Ben-Hadad taking the side of Judah. Thus, Aram broke relations with Israel and began conquering various Israelite cities. This pressured Baasha to order the stoppage of the building of Ramah. Asa then led his fellow Judeans in plundering the abandoned city, taking stones and timber, and using these to build their own cities. In Asa's mind, the utilitarian ethic of promoting the greatest good for the greatest number justified his reliance on another king, instead of on God, stealing treasures from the house of the Lord to offer as gifts to a potential ally, and plundering a foreign city to build his own people's cities. He was wrong, for God was not pleased with what he did (2 Chronicles 16:9).

**Lot's Offering of his Daughters to the Mob in Sodom.** This story from Genesis 19:1-10 had the destruction of Sodom as the backdrop. Before the city's destruction, two angels came into the place and stayed in the house of their host, Lot. When the men in the city knew about the presence of the two visitors, they surrounded Lot's house and demanded that Lot bring them out, so they can have sexual relations with them, for they were homosexuals. Lot's response was

unconscionable; he offered his two virgin daughters to the mob in order to save the two angels. Incidentally, the mob rejected Lot's offer and insisted that Lot hand to them the two angels. The two angels came to the rescue and struck everyone in the mob with blindness. Although Lot's daughters were spared from the tragedy, their father's calculation of what constituted the greatest good for the greatest number in such a situation, even to the point of sacrificing his children's dignity, showed how immoral the application of utilitarian ethics can become.

**Caiaphas' Recommendation to Kill Jesus.** This story was written in John 11:45-53, with the chief priests and the Pharisees meeting in the Sanhedrin to decide what to do with Jesus. They were deeply troubled because Jesus has become so popular by his teachings and mighty deeds. In fact, immediately preceding the meeting was Jesus' great miracle of raising the dead Lazarus back to life. The Council members feared that this figure's immense popularity might lead to a social upheaval that would catch the attention of the Romans who may then come to destroy both the Jewish temple and nation. It was at that point that Caiaphas, the high priest, said, "You do not understand that it is better for you to have one man die for the people than to have the whole nation destroyed" (John 11:50). Obviously, this is an example of utilitarian argument at its worst – save the majority; never mind if the one dying was totally innocent.

Nevertheless, the gospel writer's additional remarks about the matter must be recognized. In verses 51 and 52, he wrote:

He did not say this on his own, but being high priest that year he prophesied that Jesus was about to die for the nation, and not for the nation only, but to gather into one the dispersed children of God.

Thus, while Caiaphas recommended a death motivated by selfish utilitarian ends, God used the chief priest's words to convey a higher spiritual meaning. Jesus' death was not a utilitarian's death but something more, as discussed in the last section of this article.

### **Christian Ethics**

Christian ethics is a moral philosophy that defines what is right and what is wrong based on God's teachings in the Bible and in the life that Jesus Christ modeled. As an ethical framework, it uses three approaches: teleology, deontology, and responsibility. Teleology identifies what the end goal is, and then builds up the morality that decision-makers need to reach that end. Deontology emphasizes the duty to do what is right based on universal moral laws, while the responsibility approach highlights the need to do what is fitting based on a person's sense of accountability (encyclopedia.com). Christian ethics is teleological in the sense that it sets as the end goal of all morality, humanity's union with God. Anything that promotes this end is good while anything that hinders it is bad. Christian ethics is also deontological in that it lays down morality on the duty to obey God's teachings. Good means obedience to these teachings, just as bad means disobedience. Finally, Christian ethics uses the responsibility approach in that it also defines good or bad based on humanity's response to the character of God. Love, as the central character of God, should motivate ethical behavior (Hauweras & Wells, 2018).

Many recent studies in the field of Christian ethics have recommended the use of the Bible as the golden standard of morality in all facets of human life, including business management. This is consistent with Dyck (2014), who reported that religion informs management through written Scriptures and experiential spiritual exercises; Grimes and Bennett (2017), who suggested that

leaders place God's commandments in the center of everything they do, even in their business activities; Bretsen (2006), who proposed that owners operate a business as a mission field, with Christian theological and social principles integrated into it; Stuebs and Kraten (2021) and Dose (2021), who proposed the application of Solomon's wisdom to doing business; and Lynn and Wallace (2001), who recommended the use of the entire Old Testament as a reliable business guide. Toward this direction, Locke, Shelton, and Smith (2021) offered biblical ethics as a more comprehensive approach to business morality; Vitell (2009) surmised that religiosity can offer a background for the interpretation of business ethics, even as Mele (2015) predicted the growing relevance of religious approaches to business ethics.

### **Objectives of the Study, Gap Filled, and Significance**

This study seeks to evaluate the moral plausibility of utilitarianism through the lens of the Bible, the foundation of Christian ethics. As the observations in the literature review above point out, while many scholars questioned the plausibility of utilitarianism as an ethical theory, most of these critiques, including those from faith-based circles, used the lens of philosophical reasoning in arriving at their conclusions. Moreover, no recent studies examine the validity of utilitarian ethics through direct comparison of its principles with the Christian tenets contained in the Scriptures. This article aims to fill in that gap.

The expectation is that the findings and recommendations of this study will contribute positively to ethical theory and practice by way of evaluating utilitarianism from the standpoint of Bible teachings. The identification of flaws in the utilitarian standard, if any, may motivate utilitarian decision-makers to reexamine their moral lenses and consider other ethical frameworks such as Christian ethics to take the place of, or blend with, the utilitarian philosophy, thereby improving the moral record of business and economics.

### **Method**

The method of inquiry in this article is evaluation. Evaluation is "a form of disciplined and systematic inquiry that is carried out to arrive at an assessment or appraisal of an object, program, practice, activity, or system with the purpose of providing information that will be of use in decision-making" (Kellaghan, 2010, p. 150). In this assessment, the researcher compares the characteristics or actual state of a subject with the norms that a chosen standard prescribes. In this study, the utilitarian theory was the subject, and Christian ethics was the standard.

This article critically assesses the utilitarian principle of the greatest good for the greatest number by using relevant Bible passages and the complete Bible message. It is valid to use the Bible as the authority in conducting this type of assessment because of two reasons, namely, the Divine inspiration of the Scriptures and the perfection of the word of God, as the following verses from the sacred book support:

All Scripture is inspired by God and is useful for teaching, for reproof, for correction, and for training in righteousness, so that the person of God may be proficient, equipped for every good work. (2 Timothy 3:16-17)

The law of the Lord is perfect, reviving the soul; the decrees of the Lord are sure, making wise the simple; the precepts of the Lord are right, rejoicing the heart; the commandment of the Lord is clear, enlightening the eyes; the fear of the Lord is pure, enduring forever; the ordinances of the Lord are true and righteous altogether. (Psalm 19:7-9)

### **Findings**

Support for the utilitarian concept of the greatest good for the greatest number is not in biblical teachings. The Bible does not endorse the idea that people and organizations realize the greatest good in a decision when they maximize their pleasure or happiness, minimize their pain or unhappiness, or both, in the utilitarian sense. The utilitarian definitions of happiness and unhappiness are inconsistent with the biblical definitions to which Christian ethics subscribes. By happiness in utilitarianism is meant “intended pleasure and the absence of pain; by unhappiness, pain, and the privation of pleasure” (Mill, 1863, p. 10). The philosophy holds that people can measure and compare pleasure and pain through hedonic calculus using such factors as intensity, duration, certainty, propinquity, fecundity, purity, and extent (Bentham, 1789). Christian ethics, in contrast, stands on the belief that people can find true happiness only in their personal relationship with God and in living a life of obedience to his will. It also believes that the root cause of unhappiness is separation from God, which is a consequence of sin. Biblical references that support this view include Mark 8:35-36:

For those who want to save their life will lose it, and those who lose their life for my sake, and for the sake of the gospel, will save it. For what will it profit them to gain the whole world and forfeit their life?

While Christian ethics looks at happiness with both temporal and eternal perspectives, utilitarianism looks at happiness only from the standpoint of temporary world pleasures. Happiness in utilitarianism is hedonic in character, while happiness in Christian ethics concerns not only the physical dimension but also the spiritual.

In Ecclesiastes 2, the Bible tackled the meaninglessness of hedonism, and hence utilitarianism, and its foundation on shallow ground. Solomon, the wealthiest and wisest of Israel's kings, sought worldly pleasures in different ways. He denied himself nothing that his eyes desired and refused his heart no pleasure, only to find everything meaningless and a chase in the wind (Ecclesiastes 2:10-11). In the end, he realized that everything he pursued was not completely satisfying such that in the last verse of the book of Ecclesiastes, he concluded that only God gives true happiness (Ecclesiastes 2:26). Jeremiah 2:13 conveyed the same message. In this verse, God used symbolic language in saying that people have dug their own cisterns that cannot hold water while forsaking him who is the spring of living water. Another important biblical reference to happiness and unhappiness from the viewpoint of Christian ethics is Psalm 1:

Happy are those who do not follow the advice of the wicked, or take the path that sinners tread, or sit in the seat of scoffers; but their delight is in the law of the Lord, and on his law they meditate day and night. They are like trees planted by streams of water, which yield their fruit in its season, and their leaves do not wither. In all that they do, they prosper. The wicked are not so, but are like chaff that the wind drives away. Therefore, the wicked will



not stand in the judgment, nor sinners in the congregation of the righteous; for the Lord watches over the way of the righteous, but the way of the wicked will perish.

Support for the utilitarian rule that holds that the greatest good in a decision lies in the minimization of pain or unhappiness also is not visible. Genesis 3 taught that suffering and death entered the world because of Adam and Eve's disobedience to the will of God. Disobedience to the will of God is sin, and in Romans 5:12, it was stated that death spread to the human race because of sin. Nevertheless, 1 Corinthians 15:21-22 declared that believers will be alive in Christ because of the resurrection of the Lord Jesus from the dead. Romans 8:18-22, though, stated that the reality of suffering will persist until humanity's redemption is fully realized:

I consider that the sufferings of this present time are not worth comparing with the glory about to be revealed to us. For the creation waits with eager longing for the revealing of the children of God, for the creation was subjected to futility, not of its own will, but by the will of the one who subjected it, in hope that the creation itself will be set free from its enslavement to decay and will obtain the freedom of the glory of the children of God.

Thus, while utilitarianism will always attempt to eliminate pain or suffering, it was clear from the Bible that such an attempt will be unsuccessful in the temporal world order. The Bible, though, stated that God can use suffering to accomplish desirable ends. In Romans 8:28, Paul wrote: "We know that all things work together for good for those who love God, who are called according to his purpose," while James 2:14 taught that when Christians face various trials, they should consider it all joy because the testing of one's faith produces endurance. This was expounded in Romans 5:3-5, adding that endurance produces character, and that character produces hope.

The second part of the utilitarian standard of the greatest good for the greatest number — that of the 'greatest number' — also did not find support in biblical teachings. There was nothing in the Bible that based the morality or immorality of a decision on the number of people who experienced happiness out of it; more so, when the majority sacrifices the rights of the minority, as is often the case in the application of utilitarian ethics. God's love was intended for all. The story of Moses, bargaining that the Lord not destroy the sinful city of Sodom on account of a few righteous people living there, demonstrates this (Gen 18:23-32). Moses started his bargain with the hypothetical case of finding 50 righteous people among the unrighteous. He asked God if God still will destroy the city, in case he finds 50 righteous persons residing there, and the Lord answered that for the sake of these 50 persons, he will spare the whole place. Moses then asked the same question but went down gradually from 50 to 45, then 40, then 30, then 20, and finally, 10 righteous people, and for each of these questions, God answered that God will not destroy the city for the sake of the righteous ones, no matter how few in number. In the gospel, Jesus' life and teachings vividly demonstrated this same character of God. For instance, in the parable of the good shepherd, the shepherd who was representing God in the story, left the 99 sheep to find the 1 missing sheep (Matthew 18:12-13).

Other biblical passages underscored God's care for the poor and the marginalized sectors of society, and not just for the members of the mainstream population. Proverbs 22:22-23 taught that people should "not exploit the poor because they are poor nor crush the needy in court, for the Lord will take up their case and will exact life for life" (Proverbs 22:22-23), while Isaiah 1:17b gave instructions to "rescue the oppressed, defend the orphan, and plead for the widow."

Several passages in the Bible reject partiality and discrimination. Among these is an admonition not to take the side of the majority if these were wrong, for doing so perverts justice (Exodus 23:2). Another passage is a reminder to be just to the poor and the great alike, that is, “You shall not render an unjust judgment; you shall not be partial to the poor or defer to the great: with justice, you shall judge your neighbor” (Leviticus 19:15).

Finally, the Biblical teaching that is most fundamental in refuting the greatest number tenet of utilitarianism is the concept of the *imago Dei*. In Genesis 1:27, it was written, “So, God created humankind in his image, in the image of God he created them; male and female he created them.” Thus, with each person carrying the image of the Creator, there is no valid reason to treat anyone as a mere statistic in the utilitarian calculus of the greatest good for the greatest number, or worst, sacrifice his welfare or very life for the pleasure of others.

### **Discussion, Conclusion, and Direction for Future Research**

The utilitarian philosophy of the greatest good for the greatest number is not morally plausible in the light of Scriptural passages, biblical stories, and the entirety of the biblical message. Basing the greatest good on the maximization of happiness and the minimization of unhappiness is flawed because utilitarian theory defined these two concepts with a hedonic perspective. The Bible teaches that pleasure is fleeting and that humans can find true happiness in God alone. In addition, pain or suffering is a reality that entered the human experience because of sin and is here to stay until the human race experiences the fullness of redemption in the afterlife. Nevertheless, God can use human suffering to attain desirable ends.

The utilitarian concept of gauging the morality of an act on the “greatest number” of people who will experience pleasure out of it runs in conflict with Biblical teachings. God’s character modeled the importance of every person in the eyes of God. God will spare an entire population from destruction for the sake of the righteous, no matter how few these people may be. God will leave many people who are well in order to find and save even just one person who is unwell, and God takes care not only of the mainstream members of society but also of the marginalized ones. With every man and woman bearing the image of the Creator, it is unconscionable to sacrifice the life and welfare of anyone just to make the lives of others more pleasurable.

While others may argue that Jesus Christ himself used the utilitarian ethic in offering his life on the cross for the sake of humanity, this argument is baseless if we consider the motive of his sacrifice and the consequences that it produced. Jesus offered his life willingly and out of love, not out of compulsion and selfish ends. And in dying on the cross, the effect on humanity is not any worldly pleasure that a utilitarian may offer but eternal life in heaven that starts with a life of communion with God, even while on earth. Jesus, thus, was never a utilitarian but the perfect model and standard of what Christian ethics stands for.

With its findings, this study concludes that utilitarianism is inconsistent with the entire framework of Christian ethics – teleologically, deontologically, and responsibility-wise. It supports Mukerjy’s (2013) and Weiss’ (2019) conjecture of utilitarianism being incompatible with moral judgments and lacking conceptual clarity. It also lends credence to the findings of Kahane et al. (2015), Sheskin and Baumard (2016), Cleveland (2000), Dale (2020), and Mack (2004) on the failure of the utilitarian standard and other secular ethical theories to serve as effective guides to moral behavior. Moreover, it is in agreement with Gesang (2005) and Vivekanda (2003) on their observations on utilitarianism’s incompatibility with justice and rights, and with Vitell’s (2009) recommendation to use religiosity as background in the interpretation of business ethics.

Given the foregoing, this article's recommendation is that business people and economists who aspire to align their decisions with biblical standards consider a more morally plausible approach to ethical decision-making. The replacement or moderation of utilitarian ethics with Christian ethics is a positive move along this direction. Doing so will help prevent the recurrence of moral blunders similar to the Ford Pinto case and the healthcare industry's triage case at the height of the COVID-19 pandemic. The search for concrete ways to temper utilitarianism with Christian ethics can be an exciting arena for future research.

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#### Discussion Questions

1. Why is the study of ethics important to a decision-maker?
2. Do you find the utilitarian philosophy of promoting the greatest good for the greatest number in congruence with the business and economic aspirations on fairness and justice? Defend your answer.
3. What is your assessment of using the Scriptures as the golden standard of business morality? Do you foresee any issues that may arise if business leaders will use the Bible as their moral guide in making organizational decisions? How do you propose to address these issues?

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## **Mediator Role of Innovation in the Relationship between Social Development and Happiness**

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### **Abstract**

Governments, organizations, and researchers discuss the policies necessary for people and societies to lead a happy life in the 21st century as a critical issue. Although researchers expect a positive relationship between the happiness levels of communities and their social development levels, it is necessary to question the direction, the strength of this relationship and the existence of different variables affecting it. In this context, in this study, we aimed to examine the relationships among societies' development level, happiness level, and innovation capacity. For this purpose, we obtained 2020 data from global reports covering the social development, innovation, and happiness variables of 119 countries. We tested the research model within the framework of these data and hierarchical regression analysis, and we found that innovation partially mediates the relationship between the social development levels of countries and happiness. Research results show that innovation is an intellectual and industrial process that positively affects the happiness of societies.

## Keywords

social development, innovation, happiness, mediation

## Introduction

Works about the individual's pursuit of happiness in the Western tradition date back to the historian Herodotus, who lived in 400 BC. Since then, reflections on the causes and consequences of human happiness have been of great interest. However, scientists and policymakers did not respect assumptions about what can make people happy, as these thoughts were considered the primary domain of philosophy and religion (Helliwell & Akinin, 2018). Despite this, researchers' debate on the causes of happiness continued unabated. Alongside academic debates, states have claimed that they have made efforts to increase the happiness of their citizens throughout history. In this context, many empirical studies have asserted that economically developed societies lead happier lives. Studies focusing on the relationship between economic development or increased per capita income and people's happiness examine the issue from a financial perspective (Frey & Gallus, 2012; Zagorski et al., 2010). However, although the level of happiness in societies increases as the economy develops, happiness remains constant after a certain level. Yet generally accepted organizational and political practices assume that material wealth leads to human happiness. For decades, organizations have offered their employees money almost exclusively as an incentive. However, a country's general social, political, and cultural conditions also affect individuals' and societies' happiness (Kamel et al., 2017). In other words, social development increases the life satisfaction of society by enabling individuals to access opportunities such as better education, improved health services, housing, justice, freedom of expression, and security (Samreen & Majeed, 2019). In this case, economic development alone is insufficient to explain happiness. In this context, many studies in the literature examine the relationship between countries' development levels and happiness levels (Aksoy & Arli, 2020; Veenhoven, 2012; Zidanšek, 2007). Çevik et al. (2019) research on the happiest countries in the world showed that countries in the Americas, Europe, and Asia-Pacific regions have higher levels of happiness than other parts of the world. Economic indicators such as fairness in income distribution, low poverty, high per capita income, ecological developments, target setting for low carbon footprint, and a sustainable environment are also crucial in these countries.

However, in addition to all these, the level of happiness is high in countries where poverty and low living conditions are more common, such as Costa Rica (Çevik et al., 2019). However, the long-term time series shows that people in America, Japan, and Europe have achieved sharp increases in their average real income and wealth due to economic growth over the past three decades. Still, at the moment, they are no happier than in the former times (Stehnken et al., 2011). According to Kamel et al. (2017), innovative organizations realize that understanding happiness only in material wealth is slowly collapsing and searching for a higher purpose. However, wages still determine the arrival of a new generation in the labor market and, the reconfiguration of offices, the long-neglected happiness. Despite these developments, individuals want to be united in an ideal of happiness at work, in society, in education, in relationships, and projects. Such determinations make it worth investigating whether critical mediators exist between social development and innovation.



Happy people are more optimistic, self-confident, and willing to navigate untested terrain to achieve goals and build solid institutions. Their work encourages and inspires others to participate in economic activities and supports them in believing they can contribute positively to economic and technological progress (Ali, 2014). In this context, determining whether different social dynamics, such as society's innovation capacity, affect the link between social development and happiness can help develop comprehensive insights into happiness. To this end, in this study, we open a more difficult question for discussion by explaining the links between social development, innovation, and happiness and focusing on how innovation can play a role in this connection. In this framework, we define happiness, social development, and innovation analytically and conceptualize their relations.

## **Happiness**

For many years, the research topic has been concepts such as happiness, well-being, and life satisfaction. Although there is no clear definition of happiness, it is a concept that material and spiritual factors, that can change over time, affect. Most society accepts happiness as the ultimate goal of life (Dao, 2017). Veenhoven (1991) states happiness is "the pleasure from life" (pp. 29–30). Happiness also can be having pleasant feelings and favorable living conditions or doing what is virtuous, morally correct, meaningful, and self-righteous. Researchers defined the first view as subjective well-being and evaluated it globally as a measure of life satisfaction in specific areas such as health, education, and work (Shamsi et al., 2018). However, happiness varies according to the individual's circumstances, such as meeting their biopsychological needs, having a job and a reasonable income, having good living conditions, and believing that it affects their health or happiness. When individuals meet these needs well, they feel better, and their life satisfaction increases (Veenhoven, 1991). High life satisfaction is one of the most critical features of happy societies.

In this framework, individuals aim for happiness throughout their lives. For this reason, reaching happiness has been a research issue in many disciplines, such as psychology, sociology, medicine, and economics. These studies predicted that social welfare and happiness would increase with the states' spending on society, such as health, education, democracy, and employment (Ng, 2002). At the same time, happiness can vary according to the individual's living geography, the structure of a state, and society with different values (Veenhoven, 1991). Therefore, determining which factors positively affect happiness also will help identify the obstacles.

Despite its social and political importance, happiness is a concept that received little scientific attention in the 1970s. In 1972, the idea of happiness measuring the country's development emerged in the Kingdom of Bhutan, a small country in Asia. This idea paved the way for studies in this field (Sezer & Can, 2019). Easterlin (1974), one of the authors who conducted the first comprehensive studies in this field, determined that the happiness levels of developed countries are relatively higher than others.

Still, studies on happiness have gained importance in the 21st century. Happiness has become an indicator of sophistication and well-being in this century. Similarly, governments have started to benefit from studies in this field while developing their policies (Gül, 2017). Empirical research shows that the calculated level of happiness is increasing in many countries. Today, the average level of happiness in developed countries is 7.5 points on a 0–10 scale (Veenhoven & Dumludag, 2015). Research shows that adequate social development and supporting individuals at this level of development are a source of happiness. According to the 2020 World Happiness

Report by Helliwell et al. (2020), Finland maintains its position as the world leader in being a happy country with 7.809 points and raises its average yearly score. Finland tops the rankings scoring significantly ahead of the other top ten countries in the last three years.

Other countries are respectively: Denmark (7.646), Switzerland (7.560), Iceland (7.504), Norway (7.488), Netherlands (7.449), Sweden (7.353), New Zealand (7.300), Austria (7.294), and Luxembourg (7.238). The ten most unhappy countries in the world are Afghanistan (2.567), South Sudan (2.817), Zimbabwe (3.299), Rwanda (3.312), Central African Republic (3.476), Tanzania (3.476), Botswana (3.479), Yemen (3.527), Malawi (3.538), and India (3.573). In analyzing the main differences among these countries, the factor of social development comes to the fore first. Accordingly, explaining the concept of social development can help develop more comprehensive insights into happiness.

## **Social Development**

Social development is a normative concept. This concept refers to changing or improving the primary conditions of societies and people's lives in the desired direction based on dominant development values and goals. Therefore, developing means considering daily life and social conditions as progress compared to the past, envisioning that the conditions will be better in the future (Noll, 2014). Social development is the potential of a society to meet its members' basic needs, increase the quality of life of individuals and societies, create systems that will ensure the continuity of this increase, and make the conditions for individuals to benefit from social development (Stern et al., 2014). Toha et al. (2020) expressed social development as an investment in people. The authors assume that in a developed society, there will be no barriers to realizing dreams by each individual with dignity and confidence.

However, the meanings of economic development and social development need clarification. According to Stehken (2011) economic growth sometimes brings social development. Because negative externalities such as pollution caused by economic development, noise, disruption of family life, and continued dependence on non-renewable resources threaten sustainability. According to Porter et al. (2017), increased income often leads to significant improvements in access to clean water, sanitation, literacy, and primary education. However, personal security in middle-income countries is generally worse than in low-income countries. Regardless of income, many people in these countries live without all human rights and face discrimination and violence based on gender, religion, ethnicity, or sexual orientation.

In this context, the Social Development Index 2017 report data shows that economic growth cannot explain social development only (Porter et al., 2017). The report in question finds that although Italy's Gross Domestic Product (GDP) per capita is three times that of Costa Rica, it is only three-row higher than Costa Rica regarding social development (Mihaela, 2017). This finding shows that economic development and social development are different concepts.

On the other hand, social development is always an important issue for countries as it indicates welfare. For this reason, countries constantly monitor their social development performance in the national and international context. Thus, they identify their social development levels, become aware of their advantages and shortcomings, and try to implement their current social policies and strategies effectively and efficiently (Altıntaş, 2021a). Policymakers need these indices because of the importance of measuring social development performance in determining country policies and procedures (Porter et al., 2017). In this respect, the Social Progress Index (SPI) is an indicator that measures successful social development beyond economic growth. SPI

is “a comprehensive measure of real quality of life, independent of economic indicators.” In this context, SPI is an index that determines society’s social development and welfare level (Pulido-Gomez, 2019). This index includes *basic human needs* (nutrition and primary medical care, water, and sanitation, shelter, personal security), *foundations of well-being* (access to essential information, access to information and communication, health and wellness, environmental quality), and *opportunities* (individual rights, personal freedom, and choice, tolerance, and inclusiveness, access to further education) (Altıntaş, 2021b). According to Porter et al. (2017), SPI assesses a country’s success in transforming economic progress into improved societal outcomes; it increases the impact of economic achievements by allowing it to turn financial gains into better social and environmental performance.

However, societies need a wide variety of innovations to perform real progress. Multidisciplinary thinking, collaboration, research, and practice are critical in these innovations. It is essential to eliminate old, static thinking methods to produce sustainable and fair solutions to current issues (Kantola et al., 2017). Therefore, there will likely be an increase in the innovation capacity of developed societies. Examining the concept of innovation in this context enables understanding the social development process from a broader perspective.

## **Innovation**

Social development is not a static phenomenon. Countries that desire or have reached a certain level of social development are constantly changing. This change is taking place at an increasing rate on a global scale. At the same time, countries are constantly developing, testing, adapting, and applying new concepts and innovations (Kantola et al., 2017). In this process of change, the innovation capacity of societies has been among the primary indicators in recent years. The word innovation is derived from the Latin verb *innovare*, meaning “to create” or “to renew” (Klevenhusen et al., 2021; Schwarzkopf, 2017). Corea (2000) used technological transformation and innovation in the same sense. According to the author, technological change is any gradual or radical change in a qualitative improvement in a product or service that results in applying problem-solving knowledge to the production process, producing a product at lower costs, or increasing its efficiency in the service.

In this context, innovation covers complex processes such as learning, discovering, developing new ideas, and applying technologies. In addition to contributing to economic growth, innovation contributes to other areas, such as quality of life, employment, and financial systems (Maradana et al., 2019). Therefore, innovation has become the most fundamental and decisive indicator of the global economic success of countries, as well as a way to cope with global and social challenges (López-Cabarcos et al., 2021; OECD, 2010). Many countries have placed innovation at the center of their growth strategies to drive further progress (Cornell University, 2018). In addition, the effort to achieve economic and social goals motivates countries in this regard (OECD, 2010). For this reason, governments should produce systematic policies and strategies to increase the innovation capacity of individuals and organizations.

On the other hand, innovations can damage the structure of society. Advances in technology can erode privacy due to excessive monitoring by the government and industry. Due to advances in automation, “outsourcing” many complex tasks and processes to computers and algorithms can mean losing people’s professional abilities (Coad et al., 2021). Mihaela (2017) talks about the critical role of innovation as a driver of economic growth and prosperity and highlights the need for a broad vision of innovation for emerging economies and its role in social

development. The expression social development here means economic development based on innovation. Creating or identifying new sources of innovation is vital to transforming the current economy, reflected in economic growth over time. Therefore, any country needs to measure its innovation capacity to position itself in the change process properly.

The Global Innovation Index (GII), created for this purpose, is an indicator that helps develop policies that will encourage long-term growth in production, increased productivity, and more employment. According to the GII 2021 Report, there is a positive relationship between innovation and economic development. According to this relationship, the more developed an economy is, the more innovations it makes (Dutta et al., 2020). On the other hand, Ali (2014) argues that innovation is not only an economic issue but also a social factor related to social welfare and a nation's position in the global world. In this context, the global innovation capacity of countries is the innovation development capacity that enables them to increase social and economic welfare in science and technology (Jeon et al., 2021). For this reason, it is necessary to discuss the conceptual relationship between innovation and happiness and to suggest a perspective that deepens and improves the meaning of innovation.

### **The Relationship Between Social Development, Innovation, and Happiness**

The concepts of social development and innovation are on the agenda of many national and international organizations as the primary breakthrough vector for a knowledge-oriented society (Ionescu, 2015). Since modernization and economic development are associated with higher life satisfaction and quality of life in a given community, evidence indicates a significant relationship between socioeconomic development and well-being (Li & Bond, 2010). Researchers should further examine the concept of happiness, which changes according to cultures, philosophies, societies, values, and definitions, as a development goal (Kittiprapas, 2015a). But social development is more than any other phenomenon; it affects people's daily lives more and brings changes faster (Inglehart & Welzel 2005). One of the most important daily activities of modern societies is work. So much so that modern societies are generally working communities; working in this context is a humanitarian duty, and people can work whenever and wherever they are happy to work as part of their lives. People can also choose to do creative work that can bring them pleasure and satisfaction, regardless of the return (Kittiprapas, 2015a). We, therefore, assume that we can connect social development with basic human emotions such as happiness.

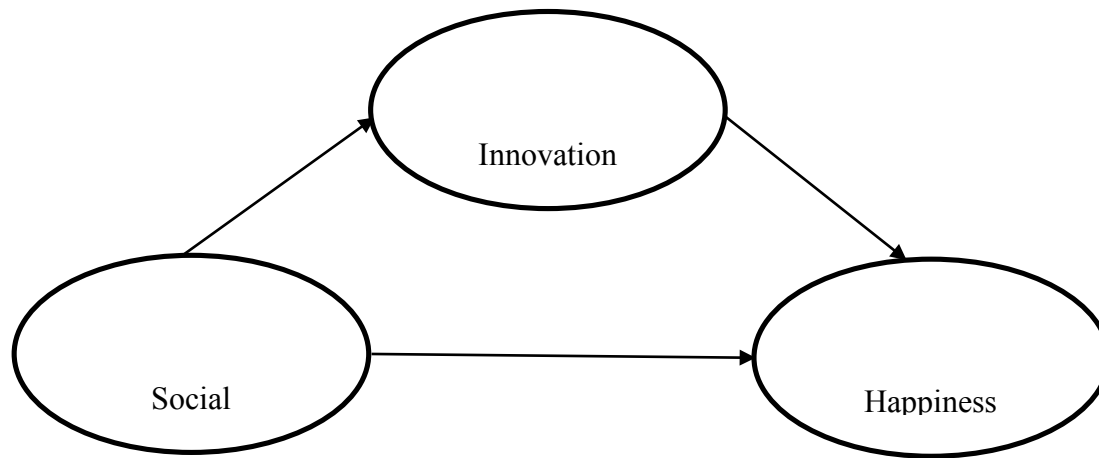
However, individuals with higher levels of interpersonal and institutional trust do significantly better than individuals in many adverse conditions, such as poor health, unemployment, low income, discrimination, family fragmentation, and fears about the safety of the streets. Living in a safe social environment helps directly support all individual lives and reduces the costs of life challenges (Helliwell et al., 2020). Another critical relationship we claim is between social development and innovation. So much so that innovation is crucial in increasing economic growth, competitiveness, and social welfare (Ali, 2014); also, it has an active role in alleviating social difficulties such as poor health, social exclusion, and inequalities and dealing with demographic problems (OECD, 2010). For example, innovations in medicine cause people to get sick less, live longer, and decrease workplace absenteeism (Dolan & Metcalfe, 2012). New technologies, products, and services can help make production processes more efficient, increasing capital intensity, labor productivity, and per capita income. They can also create new consumption opportunities through goods and services offered for final consumption (Binder, 2013).

For this reason, considering societies with high innovation capacity as the harbinger of a happier life can provide theoretical and practical contributions. In this direction, Veenhoven (2012) stated in the findings of his study, in which he examined the relationship between social development and happiness, that it is necessary to investigate other possible results to explain this relationship fully. The happiness scores of countries should be evaluated not only according to the level of progress but also by considering the innovative approaches of the countries. Therefore, in this study, we examined the role of countries' innovation capacity in the relationship between social development and happiness. In this context, the hypothesis of the research is as follows:

Hypothesis 1: Innovation has a mediating role in the effect of social development on happiness.

Figure 1 shows the relationships among the concepts predicted by the research hypothesis.

**Figure 1**  
*Conceptual Framework*



## **Method**

To test the conceptual relationships described in the research model, we obtained the data for each variable for the year 2020 from secondary sources. We got the data of the social development variable from the “Social Progress Index 2020” prepared by The Social Progress Imperative. The index, which examines social development in three dimensions: basic human needs, welfare infrastructure, and opportunities, measures 50 social and environmental indicators (Green et al., 2020). We got the data for the innovation variable from the “Global Innovation Index 2020” report (Dutta et al., 2020) published annually by the World Intellectual Property Organization. We used the “2020 World Happiness Report” prepared by the United Nations Sustainable Development Solutions Network (UNSDSN, 2020) for data measuring countries' happiness levels. We included a total of 119 countries included in at least two of the three indices. In this context, we used the data of 119 countries for social progress, 118 for innovation, and 116 for happiness. Because the indexes use different metrics, we standardized the data and performed statistical analyzes using SPSS 25.

## Results

First, we determined the mean scores of the variables in the research model, and then we calculated each variable's minimum and maximum scores. Then we examined the standard deviation values of the variables and determined the correlation coefficients. Table 1 summarizes these findings.

**Table 1**

*Mean, Minimum, Maximum, Standard Deviation Values, and Correlation Coefficients of Social Development, Innovation, and Happiness Variables*

Variables	N	$\bar{x}$	Min.	Max.	Sd.	1	2	3
Social Development	119	72.409	41.200	92.730	13.489	1		
Innovation	118	34.159	17.300	66.100	12.279	0.843**	1	
Happiness	116	5.722	3.150	7.840	1.032	0.797**	0.752**	1

\*\* $p < 0.01$

The mean index scores, minimum and maximum scores, and standard deviation values of the variables in Table 1 are as follows: The mean score of the social development index is 72.409, the lowest country score is 41.20, and the highest country score is 92.73. The standard deviation of the index is 13.489. In this context, the country with the highest score in the social development index (Norway) has more than twice the development score of the country with the lowest score (Burundi). However, the mean score of the innovation index showing the innovation capacities of countries is 34.159, the maximum score is 66.10 (Switzerland), the minimum score is 17.30 (Guinea), and the standard deviation is 12.279. Finally, the mean score of global happiness in the happiness index of countries is 5.722, the maximum score is 7.84 (Finland), and the minimum score is 3.15 (Zimbabwe). (As we only included countries with 2020 values of three indices, the results may differ according to the world happiness index ranking.) In addition to these descriptive findings, we found a highly significant correlation between the variables. So much so that there is a significant correlation of 0.843 between the social development levels of countries and their innovation capacities. In addition, there are 0.797 many relationships between the level of development of countries and happiness. But we found a high correlation of 0.752 between innovation and happiness. We used Baron and Kenny's (1986) hierarchical regression method to test the research model within the framework of our described findings. In this direction, we first examined the effect of the independent variable (social development) on the dependent variable (happiness). Second, we analyzed the impact of the independent variable on the mediating variable (innovation). Third, we analyzed the effects of both independent and mediator variables on the dependent variable. We tested each equation by estimating separate coefficients. The following conditions must be met for an intermediary effect; the independent variable must affect the dependent variable in the first equation. The dependent variable in the second equation must affect the mediating variable. And the mediating variable must affect the dependent variable in the third equation. If these conditions are met, the effect of the independent variable on the dependent variable should be less than the first in the third equation. Table 2 shows these results.

**Table 2**

*Results of Hierarchical Regression Analysis to Measure the Mediating Role of Innovation in the Effect of Social Development on Happiness*

<b>Model 1</b>								
<b>Independent Variable</b>	$R^2$	Adj. $R^2$	F	F(p)	Dur-Wat.	Stand. Beta	t	p
Social Development	0.635	0.632	198.278	0.000	1.860	0.797	14,081	0.000
<b>Dependent Variable:</b> Happiness								
<b>Model 2</b>								
<b>Independent Variable</b>	$R^2$	Adj. $R^2$	F	F(p)	Dur-Wat.	Stand. Beta	t	p
Social Development	0.710	0.708	284,.01	0.000	1.742	0.843	16.858	0.000
<b>Dependent Variable:</b> Innovation								
<b>Model 3</b>								
<b>Variables</b>	$R^2$	Adj. $R^2$	F	F(p)	Dur-Wat.	Stand. Beta	t	p
Model Summary	0.648	0.641	102.899	0.000	1.977			
Social Development						0.540	5.094	0.000
Innovation						0.294	2.778	0.006
<b>Dependent Variable:</b> Happiness								

In Model 1, Table 2, we added social development as an independent variable and happiness as the dependent variable to the regression model in the first stage of mediator variable analysis. According to the results, the effect of social development on happiness is significant ( $F(p)=0.000<0.001$ ). The standardized  $\beta$  coefficient showing the impact of social development on happiness is 0.797 ( $p=0.000<0.001$ ). In this direction, 1 point increase in social development causes an increase of 0.797 points in happiness. Model 2 examines the effect of social development, the independent variable, on innovation, which is the mediating variable. According to the results, social development levels explain 70.8% ( $R^2=0.708$ ;  $p=0.000<0.001$ ) of the variance in the innovation capacity of countries. Also, the  $\beta$  coefficient of social development is 0.843. ( $p=0.000<0.001$ ). We included social sophistication and innovativeness as independent variables in Model 3 and happiness as dependent variable in the regression model. The countries' social development levels and innovation capacities explain 64.1% ( $R^2=0.641$ ;  $p=0.000<0.001$ ) of the variance in happiness levels. The standardized  $\beta$  coefficient showing the effect of social development on happiness is 0.540 ( $p=0.000<0.001$ ). In Model 1, the  $\beta$  value of the social development variable is 0.747. The innovation variable reduced the effect of social development on happiness from 0.747 to 0.540. In this direction, we have determined that innovation capacities partially mediate role the effect of countries' social development levels on their happiness. Accordingly, we confirmed the  $H_1$  hypothesis of the study.

## **Conclusion**

The results reveal that the social development levels of the countries strongly affect the happiness levels. Societies that meet basic human needs, have a strong welfare infrastructure and have equal opportunities are happier than societies that lack these opportunities. In this context, societies need long-term planning for education, health, security, justice, and solid social infrastructure investments to be happy. In addition, according to our results, the innovation capacity of communities is a variable that significantly affects their happiness. According to Kittiprapas (2015b), good desires can also guide mental happiness; for example, the desire to be helpful to others (not selfish), to be happy to work for their results (not for reward), love of learning and self-development is high happiness. For this reason, innovation is not only a factor that provides material welfare in societies but also a process that positively affects the socio-psychological structures of societies. Societies with a suitable economic, social, and political climate to develop and apply their creativity and innovation capacities are happier.

Rethinking our understanding of happiness in terms of creativity and innovation can make it more cost-effective and efficient and shorten the way to reach it. For example, Dolan and Metcalfe (2012) stated that a 33% increase in life satisfaction causes an 8% increase in imagination. Societies with high vision can also produce different, original, practical solutions to be happy. Giovannini (2008) stated that the mathematical intelligence of citizens can be improved by strengthening people's capacity to understand the reality they live in through new technologies to disseminate better knowledge about basic social phenomena. Therefore, increasing the innovative capabilities of developed societies with a total intellectual capacity can be a basic policy or strategy that is a harbinger of happiness. Our research results provide a unique understanding of which areas community development policies should focus on. However, a society is a collection of many strategies companies and organizations create. Achieving development goals for the community is more complex than for a single company or organization (Kantola, 2017). What is needed for this is an intense effort for an industrial policy that encourages entrepreneurship and a culture of independent thinking and encourages people to be creative and positive in their attitudes toward the future (Ali, 2014). There are many theories to explain the high level of Scandinavian happiness, from successful modernization and the ability to support the less affluent to high levels of social capital (Helliwell et al., 2020). Also, societies with traditions of central control and some other communities can difficulty dealing with the freedom of thought that underlies "critical thinking" (Redding & Rowley, 2017). Therefore, a social development process that liberates the individual and produces innovative attitudes and behaviors will contribute positively to social happiness.

Innovation in the modern world takes place through integration into the system of science, engineering, and society, which has two main stages. These stages are the following: (1) to incorporate previous knowledge and technology components into a new system in a new, creative way; and (2) to extend it to other innovations that may be too far from the original application regarding materials, purposes, and design traditions. New communication and design platforms (hardware, software, informatics, and cultures) can accelerate the spiral of creativity and innovation (Roco & Bainbridge, 2013). Therefore, we recommend that policymakers prioritize innovation and diffusion policies. Innovation has been a significant milestone in societies' pursuit of happiness since Herodotus.



This research is a cross-sectional study based on country data for only 2020. Longitudinal studies using the data of these indices for more than a year can provide information about the historical course of the relationships among the variables. However, future research should be subject to a more comprehensive analysis of the theoretical links between innovation and happiness and explore which types of innovation are effective on happiness. Discussing the roles of different mediators and moderators between innovation and happiness helps develop further insights. Researchers can produce specific policies through the results obtained by applying our model in their studies where the review unit is a single country.

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### Discussion Questions

1. Why is happiness important for individuals and societies?
2. What is the direction and strength of the impact of economic development on happiness?
3. What is the structure of the relationship among social development, happiness, and innovation?

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“London Bridge by Night”  
2023

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## **Student Corner**

# **Quality Improvement Tools Frame Blood Platelet Compliance Transition: An Evaluation Case on Processes and Outcomes**

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with

**John D. Rudnick, Jr.**  
*St. Thomas University*

and

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### **Abstract**

OneBlood is a 501(c)(3) Florida-based healthcare organization dedicated to blood product distribution and scientific research. The mission of OneBlood includes the purposeful delivery of life-saving blood and stem cell products for healthcare provider use as well as scientific research facilitation to selected communities in Florida and the Carolinas. Coordination of blood donation drives and processing blood products for patient care and research uses contribute to accomplishing goals, objectives, and tasks. In 2019, after several years of in-depth study and

research, the United States Food and Drug Administration (FDA) issued a process change mandate aimed at further advancing the distribution of blood platelet products for improved patient safety and quality. An intention of this expansion of current blood testing requirements is to further improve the safe and efficacious release of blood products. This article details the systematic OneBlood implementation process. It reports on both the compliance process as well as a comparison of the results using twelve months of available data on improvement outcomes status. This is the first known evidence-based research article associated with the FDA's mandated process execution change (i.e., examining the implementation process findings and the statistical significance of the outcomes between the original and an improved process). OneBlood successfully met and exceeded anticipated implementation requirements and timeframe expectations. Based on an initial 12 months of year-over-year comparative data for examination, the findings from OneBlood's successful implementation support the intended efforts of the FDA's expanded guidance on blood platelet distribution. These findings support the intent of the FDA distribution proposed improvements. The process changes resulting in improvements through identification of additional positive screening criteria that offered statistically significant improvement ( $p = .05$ ) with execution of the modified FDA mandates.

#### Keywords

platelet, blood, compliance, process, testing, implementation, transfusion

#### Background

The U.S. Department of Health and Human Services (HHS) (2020) reports that the leading cause of infection from blood transfusions is bacterial contamination in room temperature stored platelets intended for transfusion. The FDA claims that "(p)latelets are associated with a higher risk of sepsis and related fatality than any other transfusable blood component, and the risk of bacterial contamination of platelets stands out as a leading risk of infection from blood transfusion" (FDA, 2016, p. 2). Blood banks, healthcare systems, and transfusion sites that dispense blood products in the United States are required to comply with prescriptive updated processes mandated by the Food and Drug Administration with sweeping industry changing guidelines contained in *Bacterial Risk Control Strategies for Blood Collection Establishments and Transfusion Services to Enhance the Safety and Availability of Platelets for Transfusion* (Centers for Biologics Evaluation and Research, n.d.).

OneBlood is the third-largest blood center located in the southeastern U.S. serving communities in Florida and North Carolina. The company is among the myriad of U.S. organizations that planned and refined processes that conformed to the mandates. This recent compliance effort was a major process change for both OneBlood and the blood product industry. The authors conducted a retrospective analysis of the process improvement approach taken to comply with the mandate as well as an examination of the outcomes associated with the actual changes in platelet processing. This analysis seeks to share anticipated process change expectations and considerations, and lessons learned from both the process changes and provide one year of comparative implementation outcomes and experiences.



### **Project Key Takeaways**

**Systematic Effort:** An intentional and well communicated written plan to achieve organizational goals engage constituent stakeholders and improves the likelihood of successful goal achievement. A “Team Charter” contributes to the clarity of the objective mission and expectations of all team members engaged in a process change.

**Evidence-Based Practice:** Methodological analysis with actions and adjustments based on evidence and findings provides long-lasting results and creates transparency that demonstrates avoidance of confirmation biases (included in the text and shortened for this section.)

**Process Speed:** Faster is not always better. “Slow and steady wins the race!” Added waiting time before acting can, eventually, improve process quality and results.

**Culture:** The ideal process of engaging constituent stakeholders and employing a diversity of thought and perspectives had a secondary benefit of perceived cultural improvement and improved staff morale. Increased trust from the collaborative process among leadership and rank and file staff.

**ROI/Population Health Improvement(s):** Net timeline for Return on Investment of Process Change (we can calculate estimated Short-Range Cost increase and expenses to achieve the savings and Long-Range savings that drive long-range population health Savings.

**Research:** OneBlood contributes to the body of knowledge with its detailed analysis, findings, and process to share with others around the country and the world to observe and identify best practices as a benchmark for quality excellence.

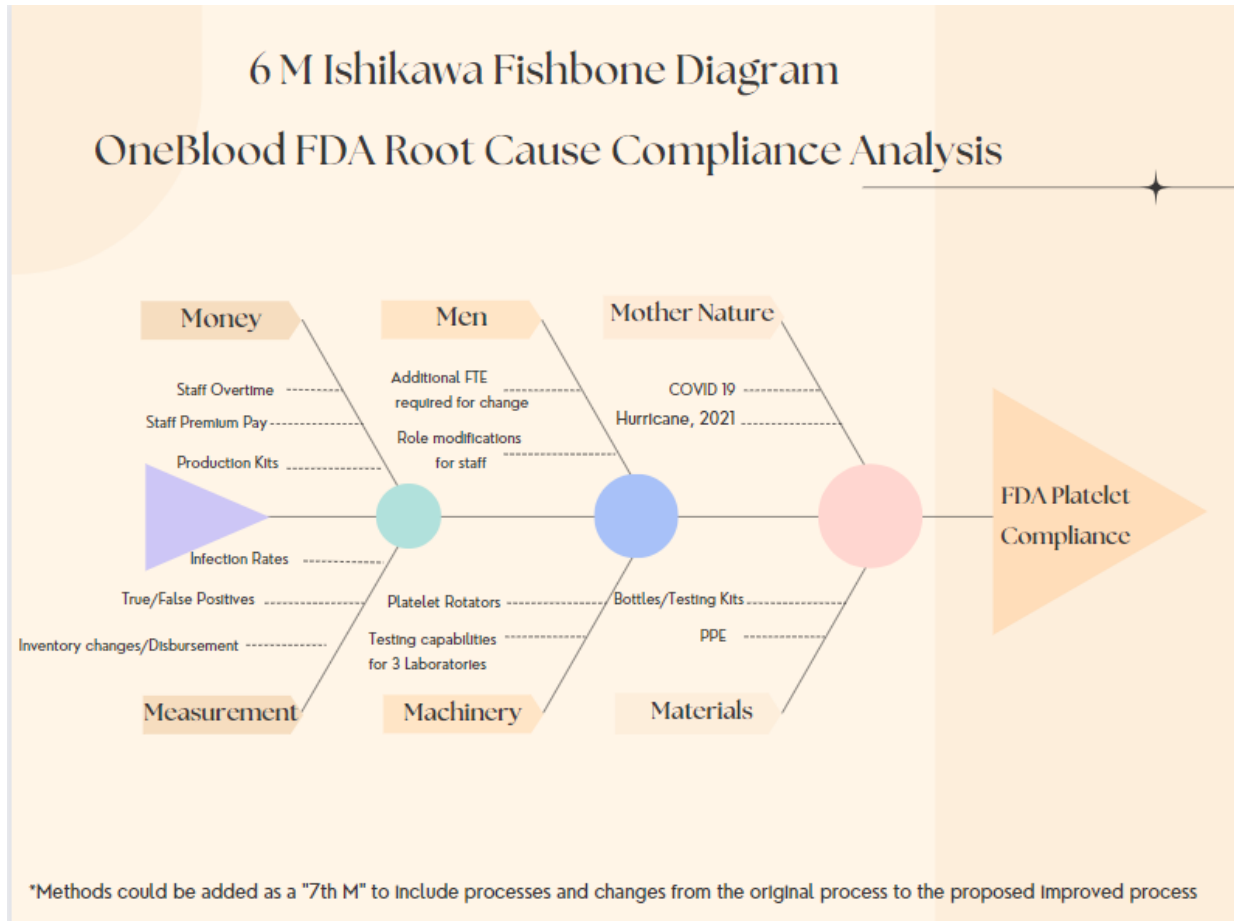
**Outcomes:** One-year post-implementation evaluation, OneBlood exceeded initial process implementation expectations using systematic process improvement methodologies successfully by achieving its goal six months early. A bonus of the study was the unplanned analysis with successful outcome of statistical significance with the improved process results.

### **Evaluation Case and After-Action Review (AAR) Tools**

An “Evaluation Case” approach captures OneBlood’s approach for the mandated process changes and associated organizational impacts employed. Harvard Business Publishing (Austin & Kelly, 2012) describes “Evaluation Case” elements as follows: definition of the opportunity or problem; listing relevant outside concepts for application; listing relevant supportive qualitative and quantitative data; description of the analysis results; description of solution and alternative actions; and a description of the proposed preferred action plan.

An After-Action Review (AAR) is one of the process improvement tools applied to frame and present the assessment. The AAR is a structured process that examines the strengths, and opportunities for improvement relative to the work of individuals or groups and addresses the following: What was expected to happen? What occurred? What went well and why? What did not go well and why not? What can be improved and how? (Salem-Schatz, Ordin, & Mittman, 2010). Organizations such as the Veterans Administration Emergency Management program employ this tool for reviewing experiences for refinement and further improvement – a “cause and effect” review using a 6 M Ishikawa Fishbone Diagram (ASQ, n.d.; The Data Quality Glossary, n.d.) (Figure 1).

**Figure 1**  
*6 M Ishikawa Fishbone Diagram*



(Source: ASQ, n.d.; The Data Quality Glossary, n.d.)

### After Action Report (AAR)

"It takes as much energy to wish as it does to plan."  
– Eleanor Roosevelt

### Process Evaluation Context (What was expected to happen and what did happen)

The goal of implementing new FDA guidance is to meet the requirements for enhanced testing of platelets while concomitantly continuing to meet hospital demand through a collaborative partnerships' approach to managing a new mix of platelet inventory. New pricing levels for the platelets that reflect the new costs incurred for enhanced testing and increased platelet collections to compensate for shortened life and reduced yields resulting from new testing requirements.

OneBlood selectively assembled a project management team 18 months prior to the FDA guidance to strategize and determine the scope of meeting the deadline of the guidance. During the discovery meeting of the project charter, the major milestones and goals, and expectancies for

completion were to strategize the development and timeline, communicate product pricing with hospital partners, purchase new equipment, and validate and install. Additionally, complete lab reconfiguration to process flow in Orlando, St. Petersburg, and Charlotte platelet laboratories. Furthermore, integrating all OneBlood IT software platforms with new platelet products, test and validate the configurations for the go-live date of May 19, 2021.

Note: The unplanned pandemic negatively contributed to the challenge. Because of physical distancing restrictions and generalized concern about social contact, blood donations, overall decreased during the height of the pandemic. The additional time to hold specimens contributed to delays in distributing products to end users. This delayed surgeries and overall care quality delivered.

A snapshot of key numbers in Figure 2 provides context to the project scope.

## **Figure 2**

### *Process Outcomes Snapshot “By the Numbers”*

- 
- 2020 July 6 – Process Change Start Date
  - 2021 May 19 – Go-live Date for Process Change
  - 61 Core Team Members
  - 200+ Meetings
  - 250 Hospitals Impacted
  - 6 Validation Weeks
  - 23 Hospital Communication
  - 1 Internal App Developed & Tested
  - 72 Employees Trained
  - 35+ S.O.Ps revisions
  - 10 + Vendors
  - 3 Lab redesigns
- 

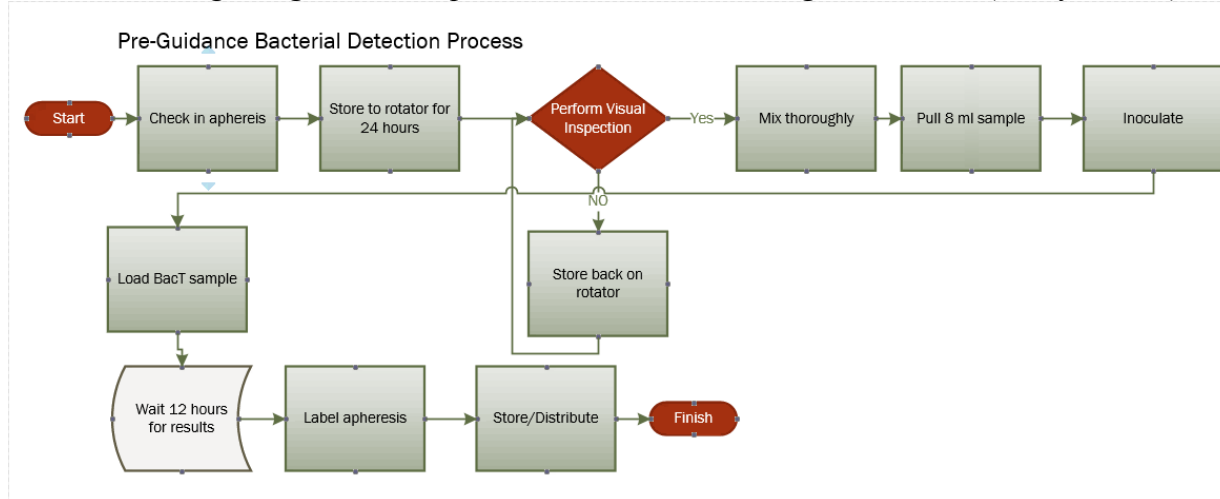
The task force reviewed pertinent information and worked on the development of a proposed revised process. The lead researcher at OneBlood illustrated the processes using a linear profile and flowcharts. Task force members examined the current process of platelet distribution (Figure 3). This group also established a value stream analysis of the *original process* within OneBlood (Figure 4); and crafted an *improved process* (Figure 5) based on the FDA mandate and requirements. (Note: The PRT Process in Figure 5 was not part of the original charter and is a recommended research area for future study.)

**Figure 3**  
*Bacterial Risk Control Strategies (Kenly, 2022a)*

Timeline of Bacterial Risk Control Strategies for Apheresis Platelets								
Platelet Pathway	Day 0	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
LVDS $\geq 36$	Collect	Sample $\geq 36$ hours	Result & Distribute	Hospital Inventory	Hospital Inventory	Hospital Inventory		
LVDS $\geq 48$	Collect		Sample $\geq 48$ hours	Result & Distribute	Hospital Inventory	Hospital Inventory	Hospital Inventory	Hospital Inventory
Pathogen Reduction	Collect Treat $\leq 24$ hours	Result & Distribute	Hospital Inventory	Hospital Inventory	Hospital Inventory	Hospital Inventory		

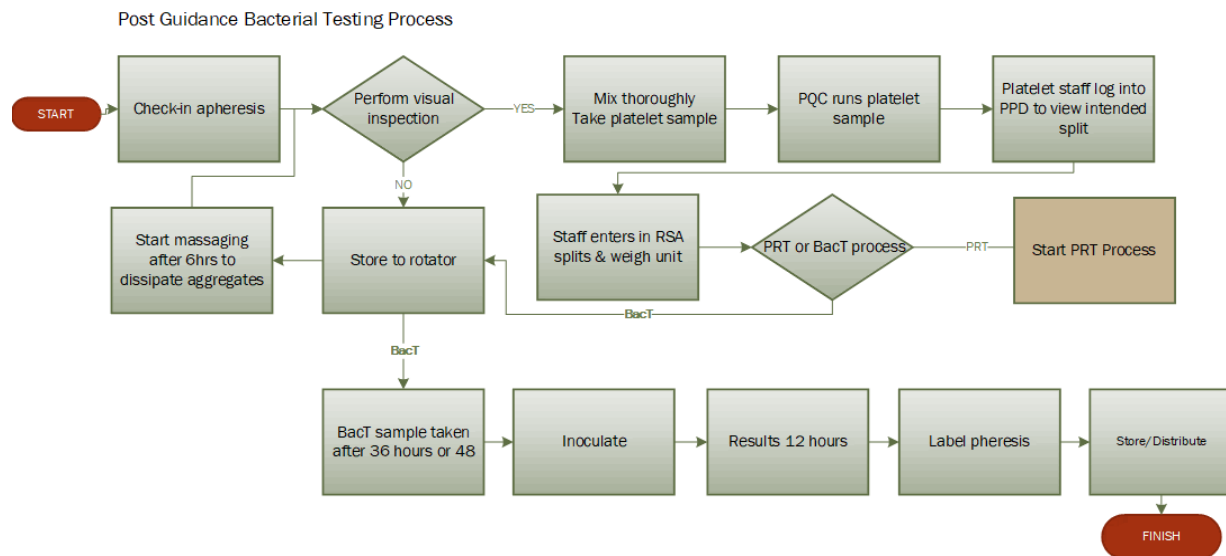
LVDS= Large Volume Delay Sampling

**Figure 4**  
*Bacterial Testing: Original and Improved Process Flow – Original Process (Kenly, 2022b)*



**Figure 5**

*Bacterial Testing: Original and Improved Process Flow – Improved Process (Kenly, 2022c)*



### *What went well and why?*

The senior leadership team reflects that the successful activation of the process resulted from an intentional and well-structured plan. The following items went well during the activation process:

- *Written Charter:* Initiation with a written project charter provided clarity to all relative to expectations.
- *Completion Time Frames:* OneBlood officially and successfully launched the required FDA platelet guidance protocols on May 19, 2021. This implementation occurred approximately six months ahead of the anticipated timeline. Completion of projects from multiple vendor collaborations occurred in time for launch Best Practice Pursuit: Benchmarking best practices among over 250 hospitals/healthcare facilities helped to verify and triangulate research conducted/processes adopted.
- *Planning:* Time to plan and map out the process. These advanced planning efforts prevented major variations from planned activation and limited unintended consequences from occurring.
- *Leadership:* A multidisciplinary task force of representative stakeholders contributed to the successful activation of the process. Bottom-up input further improved the process. Senior OneBlood leadership recognizes, in retrospect, that front-line staff is “the glue that held the operation together.” The likelihood of success among teams increases when efforts occur from a bottom-up perspective as opposed to a top-down approach (Touro, 2015).
- *Morale:* Leadership was available all hours of the day for activation and additional days that provided positive support and helped morale as a new dual inventory.
- *Measuring Outcomes:* Up-to-date tracking metrics easily identify testing significance.

- *Process Transition:* Testing process switchover – staff execution was successful because of adherence to carefully planned processes. Executed thorough testing of software solutions, vigorous training, and visible and responsive support.
- *Anticipating Needs:* Collecting additional products in preparation for dual inventory, resulted in no platelet shortages for hospital partners during implementation.
- *Communication:* OneBlood hosted many hospitals online information forums, submitted more than 20 official hospital communications through CRM, and made more than 100 phone calls for verification of the go-live date. The completion of updating platelet product codes for the online ordering system, BloodHub, the predominant national online ordering system for blood and blood products.
- *Ample Lead-Time:* FDA expectations were clear, and OneBlood had to add an extension because of the provider's lack of readiness.
- *Top-Level Engagement:* Senior-level management had an awareness of the need to modify the physical structure through a lean process to optimize space/flow for the best result. At the height of the pandemic, senior leadership recognized and appreciated the efforts of all constituents and provided premium pay for all staff.

### ***What did not go well and why not?***

*"I have not failed; I've just found 10,000 ways that won't work."*

— Thomas Edison

- *Technology Integration:* During the phases of software development, the release to the user end did not go as planned. Mid-process validation changes caused some rework. External hurdles with different clients and their abilities to accept components of the integration (Florida, Alabama, Georgia, North Carolina, South Carolina) Hospital Partner (different software integration Sunquest, Cerner, Epic) are not all ready to receive product codes.
- *Rework:* Redundant follow-up for expediting completion of deadlines. Time delays with design changes, and teams not aligned with the same turnaround time expectation.
- *External Influence:* COVID-19 affected the cycle of people available as well as needs in other parts of the company and health systems. This affected activation timelines and caused periodic delays in advancing the project.

### **What can be improved and how?**

*"Trust but verify."*

— Ronald Reagan

- *Technology Integration Requirements and Overall Planning:* Creating a more detailed IT deployment plan for after construction and equipment purchased for a timely installation.
- *Allowing more time for new equipment, calibration, and staff familiarization.*
- *Streamlining Processes:* While communication illustrated transparency, at times, last-minute changes required backtracking and re-work—especially related to the IT portion of the project.

- *Projecting Supply Needs:* Anticipating supply chain shortages with testing supplies, PRT kits, and PPE shortages.
- *Meeting Efficiency:* Some duplication of meeting efforts, which in retrospect were unnecessary during the project phase of execution.
- *Concise Contact List:* Creating a contact list from the beginning of the project instead of a few days before go-live as not everyone was familiar with the core team members for troubleshooting or resolutions.
- *Real-time Progress Monitoring:* Establishing an executive dashboard for real time key performance indicator monitoring.

## **Data Analysis**

While the original intent of the project was to examine the efficacy of the change implementation process, the authors decided to collect year-over-year data to examine the changes between the changed and improved process. Evidenced-based decision making drove the comparison and impact of changes between the original and improved processes.

### ***Report of Findings: Process Description and Statistical Significance Assessment***

#### ***Process Description***

We ran the statistical analysis on the two datasets. A description of the process to conduct a statistical analysis of the two data sets follows: The first dataset is the control group. The second dataset is the experimental group. The number of positives in both groups, respectively, are  $x_1$  and  $x_2$ . The data originated from random people who donated blood. Both populations may have very few people in common, hence we consider both populations to be independent as the data. There is no matching or paring of the data collected or pairing in any way. Furthermore, the number of successes and failures are greater than five. Hence, the hypothesis test meets the requirements for two proportions.

#### **Figure 6**

##### ***Successes and Sample Size***

	Number of successes	Size of the sample
Dataset 1	$x_1 = 30$	$n_1 = 95,953$
Dataset 2	$x_2 = 50$	$n_2 = 102,794$

*We test the following claim:*

Claim – New screening technique produces more positive test findings from the more rigorous screenings mandated by the FDA.

Hypothesis-  $H_0: p_1 = p_2$

$H_1: p_1 < p_2$

### ***Assessment of Statistical Significance***

We ran a 2 propZTest on TI 84 with *significance level*  $\alpha = .05$ . The P-value we obtain is .026 and the z statistic is -1.92. Since the P value is less than  $\alpha$ . We reject the null hypothesis.

There is suggestive evidence to support the claim that new screening technique produces more positive test findings from the more rigorous screenings mandated by the FDA.

### **Looking Ahead: Opportunities for Future Study**

The following illustrate considerations for reflection and potential areas for future consideration:

- Consider cost reduction and cost avoidance opportunities related to re-admission due to infection; and avoidance of expensive regimens of antibiotics to stem infections from infected platelets
- Improving disaster/crisis/emergency planning to mitigate against the risks of running low on blood supplies.
- PRT Clarification on the scope of the study process: PRT is a variable that was not an original focus of the study. PRT is more expensive and is not determined to be a good standard first line. A review of the initial data prompted a closer look at the frequency of PRT relative to the supply and demand of blood inventory that experienced an unusual factor— multiple mother nature influence forms. The Ishikawa diagram illustrates these as potential mitigating factors.

In practice, using year over year comparison, the initial review did not show a statistically significant difference using the improved process. A review from two different quarters' data sets for year-over-year comparison helped with the validation process.

There may be no reason for the differences, and it requires trending for valid comparison.

- The PRT factor, while initially an extraneous “footnote factor, emerged as a variable to potential study. The use of a more expensive but time efficient PRT testing process could have affected the supply of blood products. Shortages of blood products and the emergent need for release of inventory in a more rapid time-frame than the standard testing protocol would provide could be a consideration for analysis relative to the demand for more timely blood release.

### **Discussion**

OneBlood leaders modeled the way for a successful process activation with their active engagement and authentic interest (Kouzes & Posner, 2017). The initial charter defined the implementation process and was a key foundational guide toward systematic integration of input and ideas.

The OneBlood experience post-improved process implementation, one-year post-activation, affirms the FDA's initial research findings that additional testing on donated blood and products improves the previous standards and protocols, and establishes a new model for achieving



its vision and mission. The process identified additional contaminated specimens and improved distribution efficacy and population health. The processing steps and methodologies used collaborative bottom-up feedback illustrating many transformational leadership practices that supervisors and leaders demonstrated.

Performance improvement methodologies, platforms, and tools such as those in Lean Six Sigma seek to analyze original or current processes and propose new improvements to eliminate unnecessary and or duplicative steps. The goal is to achieve efficiencies and optimize return on investment for resources expended. In this case of improving platelet compliance mandates, the improved process added steps that increased the number of steps needed, but overall, demonstrates cost savings by reducing patient illness and hospitalization.

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#### Discussion Questions

1. What are several ways that an After-Action Review (AAR) for a major planning initiative can be useful to an organization?
2. Describe the process of identifying root causes for improvement opportunities in an organization. What are tangible benefits from the outcome of such an analysis?
3. Discuss the importance of evidence-based decision-making for project analyses. How can data-driven decisions contribute to a performance improvement process?

#### To Cite this Article

Kenly, B., Rudnick, J. D., Jr., & Saraswat, J. (2023, Fall). Quality improvement tools frame blood platelet compliance transition: An evaluation case on processes and outcomes. *Journal of Multidisciplinary Research*, 15(2), 97–108.

## **Life Forward**

### **Shay Mowlem** *High Tech Executive*



### **Background**

Shay Mowlem is a marketing and strategy executive with more than 25 years' experience in enterprise software. He is now the Chief Marketing and Strategy Officer at NinjaOne, a cloud-native IT management company.

Prior to joining NinjaOne, Shay served as Chief Marketing Officer at Illumio, where he led the company through a global go-to-market transformation that included innovative strategies to increase demand creation programs, to build brand awareness, and to create the company's Zero Trust Segmentation category. Previously, he served in executive marketing and product roles at Rubrik, MuleSoft, and Splunk, where he led each of the companies through significant growth. Shay earned degrees in physics and electrical engineering from Binghamton University and Columbia University.

**Interview**  
**by Hagai Gringarten**  
Editor-in-Chief

*Journal of Multidisciplinary Research*

**1. Life is about stories. Do you have a favorite story you use as an icebreaker?**

I like to share the story of my beginnings. I was born in Israel. When I was three years old, we moved to Nigeria, where I lived in a village near the city of Ibadan. At the age of seven, I was sent to boarding school in England. We moved to New York when I was 10 and bounced around a bit before settling down in Great Neck, Long Island. During my first six elementary school years, I changed schools six times. It was tough, but it also taught me resilience.

**2. What are the top three characteristics that contributed to your success?**

The top three qualities that I value the most are my work ethic, integrity, and ability to work well with others. Regarding work ethic, I push myself hard and always follow through on my commitments. In terms of integrity, I strive to set a high standard in my behavior and that of my team. I have no tolerance for people who are self-serving or indecent toward others. Finally, our business is a team sport, and success is realized only when we work well together. I deeply value these three characteristics and place great emphasis on hiring individuals who have demonstrated them throughout their careers.

**3. What life-changing events or decisions have guided your career?**

I had a fortunate start to my career and progressed quickly, ultimately achieving a Vice President role in my late 20s at one of the most prominent high-tech companies of the time. However, I felt lost. The drive and ambition that facilitated my academic and career success left me feeling lonely and empty. A friend suggested that I attend a Tony Robbins seminar, and I loved it. It reignited my energy. Over a two-year period, I participated in various advanced personal development classes that allowed me to reconnect with my core identity, find joy in life, nurture my physical and mental health, cultivate personal relationships, and explore and pursue interests outside of work.

#### **4. Tell us of any expressions your parents often repeated with you.**

I learned so much from my parents. One of the enduring gifts they gave me was the “Desiderata,” a prose poem by U.S. writer Max Ehrmann that reflects many of my parents’ teachings.

#### **5. What books have you read lately?**

Most recently, I read *The Hard Thing About Hard Things* by Ben Horowitz. I had the opportunity to work under Ben at Opsware during the company’s heyday and its blockbuster acquisition by Hewlett-Packard. It was fascinating to learn the backstory about the company’s tumultuous beginnings. If there’s one thing you should take away from the book, it’s that success is born out of sheer will and tenacity. Ben and the original team persevered through formidable hardships and failures. Ben now runs Andreessen Horowitz, one of the top venture firms in Silicon Valley.

#### **6. Imagine your phone rings, and it’s you from 30 years ago. If you only had a minute to talk, what would you say? (Yes, we know, buy AAPL!)**

If I could go back in time, I would tell myself to buy Google, Amazon, and Tesla stock as well! All kidding aside, I would advise listening to your loved ones. My wife often challenges me to think differently, and more often than not, she is right. For example, on multiple occasions, I was attracted to opportunities that offered higher compensation, impressive titles, and prestigious company credentials, but they turned out to be the wrong opportunities for me. In my experience, more than anything else, your ability to work well with your colleagues will determine whether you succeed or fail.

#### **7. What elevator speech would you give children about success in life?**

Pursue the things that make you happy, and give them your all. Fear and regret will only weaken you, so focus your energy on being productive.

#### **8. What is the best advice you’ve ever received, and who gave it to you?**

“Don’t run away from a bad situation. Always run toward something great.” This was shared with me by a manager early in my career, and he was absolutely right.

#### **9. What would you like to see as your life’s legacy?**

I would like to be remembered as someone that had a positive contribution to our world and as a kind and down-to-earth individual that was always willing to help others. Most importantly, I want to have left my mark as good father, husband, brother, and son.

**To Cite this Interview**

Gringarten, H. (2023, Fall). Life forward: Shay Mowlem: High tech executive. *Journal of Multidisciplinary Research*, 15(2), 109–112.

## Book Review

### Book Details

Jasanoff, S. (2022). *Uncertainty*. Boston Review, 160 pages, \$15.95, paperback, ISBN: 9781946511669.

### Reviewer

Emily R. Gerace, M.A., New York University

### Synopsis and Evaluation

Political instability, inflation, debates over human rights, the loss of loved ones to Covid-19, and a sense of impending environmental doom have recently amalgamated into an air of anxiety that permeates nearly every arena of one's life. Conflicting messages from politicians, government officials, and media outlets have exacerbated this unease, particularly because audiences are already so deeply divided. In an effort to mend the current circumstances—and avoid reproducing them in the future—we must examine how they came to be in the first place. *Uncertainty*, a Boston Review volume edited by Joshua Cohen and Deborah Chasman, features such an examination.

While the book's presentation gives the impression that Sheila Jasanoff is the author, there are actually eleven contributors to the collection, all of whom bring meaningful perspectives to the conversation. The forum portion is centered around Jasanoff's essay, "Humility in Pandemic Times," in which she calls for humility in policies surrounding potential crises. She argues that the American Covid-19 response failed because of its emphasis on a false sense of preparedness. To Jasanoff, if the U.S. had not been busy basking in its militaristic mirage of security, people might have asked the right questions about potential obstacles like vaccine hesitancy or impacts of socioeconomic status before they materialized. She proposes the implementation of institutional "technologies of humility," mechanisms that create more efficient and ethical outcomes by placing "memory, experience, and concerns for justice" at the forefront of policymaking (p. 14).

With conspiracy theories and general distrust in the government running rampant, Jasanoff's call for humility in policies makes sense. *Uncertainty*—when it is unaccounted for in advance—leads to conflicting authoritative messages as government organizations gain new knowledge. Many people in crisis want to feel protected by objective truths, so it can be quite jarring to hear that the incubation period is not what people thought it was, or that the type of mask one's family is using is no longer recommended, or that the vaccine one received does not protect against the variant that is claiming lives across the country.

With uncertainty at the heart of this inconsistent messaging, it may seem paradoxical to suggest that the government further embrace it. Jasanoff's model addresses this issue by emphasizing that humility must exist in the plans that *anticipate* crises. Leaning into the uncertainty and considering unknowns before the disaster occurs can avoid constant amendments to plans that were originally posed as fixed and factual. This shift in thinking asks us to consider what is truly in our power, and to keep disaster plans within those bounds. Even in the absence of the comforting objectivity for which people hope in the face of danger, Jasanoff's call for humility means resisting the urge to apply a Band-Aid of preparedness that will only be slowly ripped off as more information becomes available.

While the forum respondents thoughtfully produce alternatives to humility when reforming crisis response policies, another fruitful angle to consider is the matter of what humble policies look like in practice. Jasanoff's "technologies of humility" aim to focus on more than just closing gaps in scientific knowledge; mechanisms that are realistic about the limits of our understanding ask different questions than those that are created to uphold an illusion of a government that is prepared for anything that comes its way. This premise would be strengthened, however, by concrete examples of what those mechanisms might be and how they can impact the next crisis differently. Jasanoff provides vaccine anxiety as an example of an obstacle that humility might have addressed if officials had asked why people do not trust medical authorities. She points to the importance of thinking from the perspectives of people on the margins, which is undoubtedly an arena in which our policies have fallen short time and time again. Still, it is not entirely clear what could have gone differently. Without a connection to a tangible positive change, readers are stuck with the challenge that even if officials had acknowledged that some people have very valid reasons for their distrust, the distrust would still be there. It is difficult, then, to conceptualize how anticipating vaccine hesitancy would provide a means of undoing generations of trauma and doubt, especially under such urgent circumstances. The absence of a concrete example, however, does not render this line of thought useless; if anything, it points to the importance of continued work on the subject by experts from many different disciplines.

In its embodiment of that approach, *Uncertainty* stands at the beginning of what will likely be a long tradition of scholars and other experts trying to figure out what caused the tumultuous events of the past three years, and more importantly, what we can learn from them. Cohen and Chasman curate a multidisciplinary selection of convincing arguments that are concise and unique to one another. The collection covers nearly every side of the problems at hand, from political and financial matters to philosophical and spiritual ones. The discussion provokes readers to think critically not only about the systems in place to manage national and international crises, but also about affective responses and individual agency.

## **In the Author's Own Words**

"Where prediction runs the present out into the future, humility reverses time's arrow and pulls possible futures back to show us how to act in the present" (Jasanoff, p. 28).

## **Reviewer's Details**

Emily R. Gerace (erg395@nyu.edu) is an English Ph.D. student at New York University. Her research interests include early medieval literature; pedagogy and andragogy; and queer and gender studies. ORCID 0009-0001-5592-6295.



### **To Cite this Review**

Gerace, E. R. (2023, Fall). Review of *Uncertainty* by S. Jasanoff. *Journal of Multidisciplinary Research* 15(2), 113–115.



“River Thames, London”  
2023

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## Book Review

### Book Details

Fernández-Calienes, R., & Gringarten, H. (Eds). (2023). *Advances and lessons in sports*. Newcastle upon Tyne, UK: Cambridge Scholars Publishing, 345 pages, \$124.95, hardback, ISBN (10): 1-5275-9415-7. ISBN (13): 978-1-5275-9415-9.

### Reviewer

Robert Epling, Ph.D., St. Thomas University

### Synopsis and Evaluation

*Advances and Lessons in Sports* is an excellent compilation of research for those interested in studying sport or working in the sport industry. Broad in scope, the book aims for a diverse range of readers. Faculty preparing students as future sport leaders, scholars pursuing sport as a significant field of inquiry, and practitioners already actively engaged in the sport sector all should find valuable information and insights.

Thirteen chapters are topically arranged into three parts. Part 1 addresses health and fitness, and includes chapters on building mental health among college athletes, approaches in responding to mildly traumatic brain injuries, the impact of coaches on alcohol consumption by athletes, and the efficacy of using tracking devices to promote physical activity. Part 2 shifts emphasis from fitness to the intersection of sport and society. This segment of the book encompasses a wide range of subjects. A substantive chapter on the historical relationship of business studies and the impact of those studies on sport management scholarship provides an excellent knowledge foundation for an academic field (sport management) that is still relatively young, stretching back only to the 1960s in the U.S. A superb chapter on the collaborative work between university Athletic Training faculty and the clinical preceptors who play an important role in the professional development of AT students clarifies current themes that should enhance such professional alliances. Chapters on Name-Image-Likeness (NIL) monetization strategies, and an examination of disability definition language in the Special Olympics and Paralympics are similarly useful.

While the first two thirds of the book are traditional research chapters, Part 3 adopts the case study method. A diverse set of analyses emerges, both topically and geographically. Two chapters are devoted to sport in Israel, one a historical study of using fencing to educate youngsters in northern Israel, the other a contemporary investigation into the incentives for consumers to participate in physical puzzle activities such as escape rooms. Other timely topics include an analysis of Taekwondo fighting tactics in Hong Kong, and three research cases in the United

States: the impact of self-talk among golfers, the financial impact of hosting consecutive college football games on a local economy, and the strategies employed to build NXT, a developmental brand of professional sports entertainment behemoth World Wrestling Entertainment (WWE).

Those case studies reflect another important aspect of the book. While the themes and topics are noticeably diverse, so is the global span of the endeavor. In addition to various regions of the United States, other studies focus on Australia, Hong Kong, Israel, and Korea. Such breadth adds a distinctive aspect.

*Advances and Lessons in Sports* is a beneficial contribution to contemporary sport scholarship. Addressing a broad range of subject matter from traditional and case study approaches, the book successfully binds themes and topics together coherently with an effective blending of practical application and impressive scholarly research. Faculty in sport-related disciplines should find *Advances and Lessons in Sports* suitable as a textbook at the graduate or undergraduate level, particularly in seminar and foundational courses that introduce students to a range of topics.

### **In the Author's Own Words**

“Most of the researchers reviewed for this study discussed the profession of athletic training, educational standards, and clinical preceptorship within the field. The researchers discussed the theory-practice gap, acknowledging the deficits in several healthcare professions and offering ways to reduce them—further research into the theory-practice gap in athletic training and the impact on student learning. The literature indicated the need for support and mentorship of clinical preceptors, faculty, and students to obtain optimal learning environments” (p. 162).

### **Reviewer's Details**

Robert Epling, Ph.D. (repling@stu.edu), is an Associate Professor and Sports Administration Program Director in the Gus Machado College of Business at St. Thomas University, in Miami Gardens, Florida. His area of expertise is sport history. His research interests include sport history, sport in society, and sport leadership.

### **To Cite this Review**

Epling, R. (2023, Fall). Review of *Advances and lessons in sports* by R. Fernández-Calienes, & H. Gringarten. *Journal of Multidisciplinary Research*, 15(2), 117–118.

## Book Review

### Book Details

Frank, M. (2023). *Unearthed: A lost actress, a forbidden book, and a search for life in the shadow of the Holocaust*. New York, NY: Hachette Book Group, Inc., 242 pages, hard cover, ISBN: 978-0-306-82836-2.

### Reviewer

Dr. Diane Cypkin, Pace University

### Synopsis and Evaluation

It reads like the best of detective novels, yet it is a true story. Meryl Frank, the author of *Unearthed: A Lost Actress, a Forbidden Book, and a Search for Life in the Shadow of the Holocaust*, is given a book by her elderly aunt, the family storyteller and historian. She is told, in no uncertain terms, to keep it safe. She is told that it includes a chapter about her cousin, Franya Winter, who was a well-known Yiddish actress in Vilna before the war and, sadly, did not survive the Holocaust. Finally, she is instructed *not* to read it—even though Frank could not even if she wanted to. It is in Yiddish, and Frank does not know the language. In English, the slim volume is called *Twenty-One and One: Twenty-One Yiddish Actors Murdered by the Nazis in Vilna, 1941–1942* by Shabtai Blecher.

Needless to say, being told *not* to do something, only whets one's appetite to actually do the forbidden. The mind begins to think, "What's in there?" "What shouldn't I know?" So Frank, who frequently found herself thinking and wondering about what happened to her extended family in Europe during the Holocaust—most all of them in Lithuania--and especially about what happened to her actress cousin, doesn't read the book. Instead, she embarks on an endless amount of research, determined to find answers to her questions. In fact, she ends up approaching this as something she *must* do—for her own sake, the sake of her family, and what she sees as the duty to remember.

Is Frank up to the job? The answer is a resounding Yes! A graduate of Rutgers and Yale Universities, with degrees in International Relations, Political Science, and Public Health, Frank, "is an international champion of women's leadership, human rights and political participation." She has held numerous leadership positions both in societal and political organizations. She has been recognized frequently for her conscientious and caring work. Indeed, reading *Unearthed* we quickly see how Frank has applied her innate conscientiousness and care in its preparation. There isn't an on-line site she didn't visit if there was any hope that she would discover something. The

same can be said for the number of archives she went to worldwide along with the many and varied people she interviewed. And then there are the number of times she visited Lithuania, and particularly Vilna, her family's home. Written clearly, empathetically, and well, the result is a fascinating work that draws the reader in and leaves one thinking of those lost to us all. In short, I highly recommend *Unearthed* to those interested in the Holocaust, history generally, European Yiddish theatre history, and, most importantly, the consequences of war on the human community.

### **In the Author's Own Words**

"My parents didn't physically live through the Holocaust, and neither did my grandparents. They were an ocean away and were able to make only the most sporadic contact with the relatives who perished in Vilna and Vasilishok, in Berlin and Warsaw. But they certainly lived with a pain that defined them, and what I carry is a symptom of the lasting damage that the Holocaust has caused to the fabric of our modern world" (p. 23).

"At the outset, I was not totally sure what I hoped to achieve, only that plunging into the past was something I *had* to do" (p. 24).

"I brought my children to Vilnius because I wanted them to see where they came from, to feel the loss and to know what can happen if we are not constantly fighting hate" (p. 57).

### **Reviewer's Details**

Dr. Diane Cypkin is both an academic and a performer. She is a Professor Emeritus at Pace University and has published articles on various aspects of the Holocaust. She has reviewed countless books on the Holocaust for *Martyrdom and Resistance*, a newspaper published by Yad Vashem. As a performer, she spent years in the Yiddish Theater in New York and continues doing her one-woman shows in Yiddish and English. She has curated exhibitions on the Yiddish Theatre in New York. She is a child of Holocaust survivors from the Kovno Ghetto/Concentration Camp in Lithuania. And like Meryl Frank, she is a "Litvak."

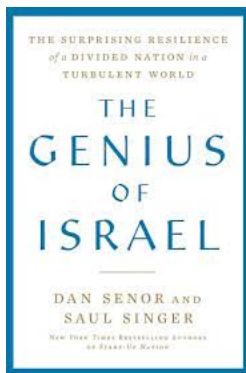
### **To Cite this Review**

Cypkin, D. (2023, Fall). Review of *Unearthed: A lost actress, a forbidden book, and a search for life in the shadow of the Holocaust* by M. Frank. *Journal of Multidisciplinary Research*, 15(2), 119–120.



## Editor's Choice Recent Books of Interest – Fall 2023

**Hagai Gringarten**  
*St. Thomas University*



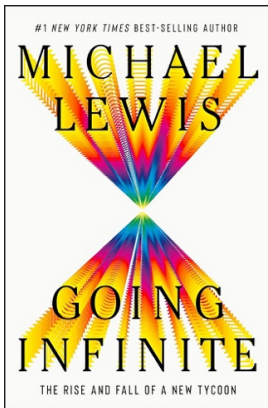
1. Senor, D., & Singer, S. (2023). *The genius of Israel: The surprising resilience of a divided nation in a turbulent world*. New York, NY: Simon & Schuster, 328 pp., hardcover, \$30.00, ISBN 978-1982115760.

In *The genius of Israel*, Senor and Singer tell the story of a diverse people and society built around the values of service, solidarity, and belonging. Despite its small size and ongoing security challenges, Israel has managed to overcome many societal issues that affect other wealthy democracies. Moving from military commanders integrating at-risk youth and neurodiverse individuals into national service to high performing companies accommodating working parents, to dreamers and innovators launching a duct-taped spacecraft to the moon, to improving health solutions globally, Israelis' hopeful and optimistic outlook on the future sets them apart from the rest of the West struggling with issues such as loneliness, teen depression, and social decline.

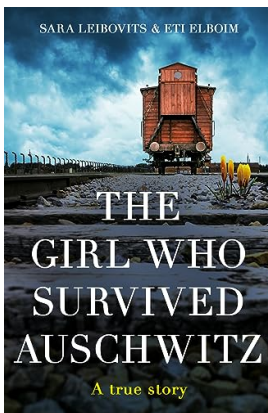


2. Frei, F., & Morriss, A. (2023). *Move fast and fix things: The trusted leader's guide to solving hard problems*. Brighton, MA: Harvard Business Review Press, 238 pp., hardcover, \$30.00, ISBN 978-1647822873.

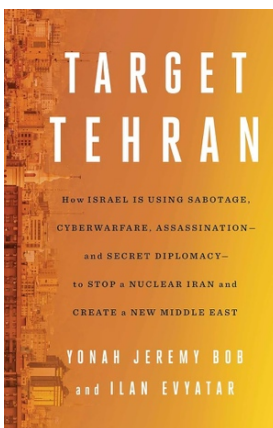
The bestselling authors Frances Frei and Anne Morriss reinvent the playbook for how to lead change with a radical approach that moves fast, builds trust, and accelerates excellence. They argue that Facebook's adoption of the motto "Move fast and break things" is deeply flawed—and that it keeps you from building a great company. Drawing from their extensive experience in assisting executives and entrepreneurs, the authors have discovered that the notion of a trade-off between speed and excellence is unfounded.



3. Lewis, M. (2023). *Going infinite: The rise and fall of a new tycoon*. New York, NY: W. W. Norton, 288 pp., hardcover, \$30.00, ISBN 978-1324074335. When Michael Lewis initially encountered Sam Bankman-Fried, he emerged as the youngest billionaire in the world and a prominent figure in the crypto industry. In *Going infinite*, Lewis takes the readers into the mind of Bankman-Fried, whose rise and fall offers an education in high-frequency trading, cryptocurrencies, philanthropy, bankruptcy, and the justice system. A psychological portrait and a financial roller-coaster ride, tracing the trajectory of a character who lived by his own rules until it all came undone.

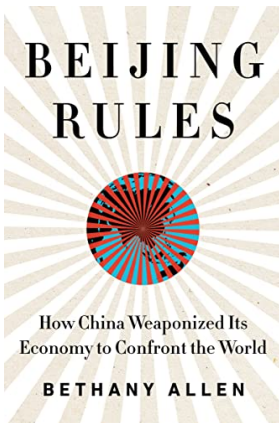


4. Elboim, E., & Leibovits, S. (2023). *The Girl Who Survived Auschwitz: A remarkable and compelling memoir of love, loss, and hope during World War II*. Glasgow, UK: HarperCollins, 336 pp., paperback, \$18.99, ISBN 978-0008600280. At 16 years of age, Sara Leibovits endured incredible pain and hardships during her time in the death camp. Despite the horrors she faced, she always strived to uphold her family's values of courage, faith, and kindness to others. In this powerful and compelling memoir, Sara's story is intertwined with that of her daughter, Eti Elboim. Seventy years after the Holocaust, Eti reveals the inherited trauma of the second generation and completes the Holocaust survivor's tale.



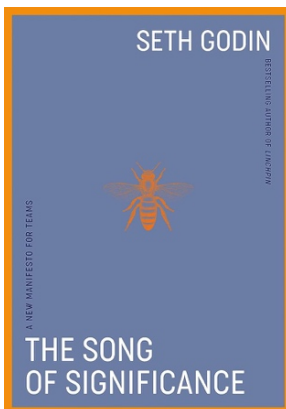
5. Bob, Y., & Evyatar, I. (2023). *Target Tehran: How Israel is using sabotage, cyberwarfare, assassination – and secret diplomacy – to stop a nuclear Iran and create a new Middle East*. New York, NY: Simon & Schuster, 368 pp., hardcover, \$26.09, ISBN 978-1797164595. The remarkable story of how Israel used sabotage, assassination, cyberwar—and diplomacy—to thwart Iran's development of nuclear weapons and, in the process, reshaped the Middle East. Bob and Evyatar reveal the utilization of documents obtained from Tehran in a covert Mossad operation by Israel to demonstrate Iran's repeated violation of the 2015 JCPOA nuclear agreement and its active nuclear weapons program. An account of Israel's successful efforts to outmaneuver Iran, drawing from interviews with confidential sources from the Mossad and the CIA.





6. Allen, B. (2023). *Beijing rules: How China weaponized its economy to confront the world*. New York, NY: HarperCollins, 336 pp., hardcover, \$26.39, ISBN 978-0063057418.

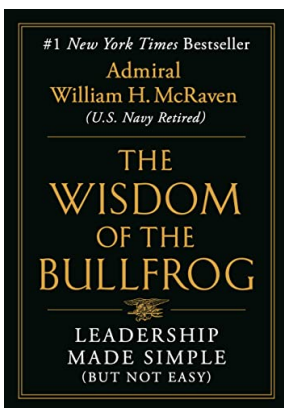
Written by one of the first U.S. journalists who exposed China's covert influence operations in the United States, *Beijing rules* presents eye-opening accounts of Western institutions bowing to Beijing's pressure. Allen offers a glimpse into a potential future for the U.S., where liberal democracy is firmly controlled by authoritarian capitalism. Through thorough investigative reporting, the book raises awareness about the urgent actions needed to safeguard the freedoms we currently enjoy and often overlook.



7. Godin, S. (2023). *The song of significance: A new manifesto for teams*. New York, NY: Portfolio, 208 pp., hardcover, \$25.00, ISBN 9780593715543.

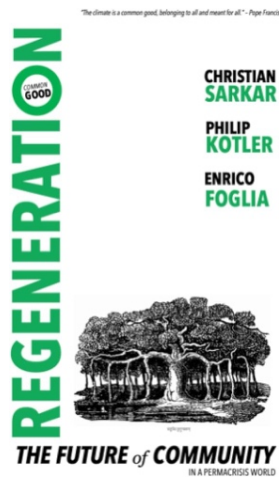
*The song of significance* is a thought-provoking reflection on the state of work, exploring its current challenges and offering solutions for improvement. With the rise of remote work and economic instability, many individuals feel disconnected and disengaged from their jobs. Unfortunately, some managers have responded with harsh measures such as layoffs, surveillance, and mandatory meetings, which only exacerbate the problem. Godin argues that there are alternative approaches that leaders can take to create a more positive work environment and foster

greater engagement among employees.



8. William, A. (2023). *The wisdom of the bullfrog: Leadership made simple (but not easy)*. New York, NY: Grand Central Publishing, 224 pp., hardcover, \$25.00, ISBN 978-1538707944.

As a Navy Seal with four decades of service, Admiral McRaven dealt with every conceivable leadership challenge, from commanding combat operations—including the capture of Saddam Hussein, the rescue of Captain Phillips, and the raid for Osama bin Laden. Drawing on McRaven's extensive life experiences, including crisis situations, management debates, organizational transitions, and ethical dilemmas, *The wisdom of the bullfrog* offers readers invaluable leadership lessons that separate the good from the truly great.



9. Foglia, E., Kotler P., & Sarkar, C. (2023). *REGENERATION: The future of community in a permacrisis world*. N.p.: Idea Bite Press, 320 pp., paperback, \$24.99, ISBN 978-1734244137.

For 40 years, institutions worldwide have attempted to “mitigate” climate change, but their efforts have yielded no results or, worse, have failed to halt the rapid destruction of ecosystems crucial to our survival. Despite the desperate pleas of the scientific community, leaders and businesses have largely ignored the plight of our dying planet. Sarkar and Kotler believe there is hope in “regeneration,” which offers a path to renewal starting with individuals, their friends, and the surrounding community. *REGENERATION: The future of community in a permacrisis world* explores various successful methods and tactics employed in different communities, providing an in-depth examination of the topic.

#### To Cite these Reviews

Gringarten, H. (2023, Fall). Editors’ choice: Recent books of interest – Fall 2023. *Journal of Multidisciplinary Research*, 15(2), 121–124.

## **Journal of Multidisciplinary Research**

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**Compiled by Raúl Fernández-Calienes**

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