HOME TEAM JOURNAL

Issue no. 11
March 2022

by Practitioners, for Practitioners

BUILDING PUBLIC TRUST

Twelve Tips for Home Team Leaders

Insights from Police Leaders

Preventing and Preparing for Cyber Attacks

BSC Brief: The Psychology and Susceptibility of Singaporeans to Foreign Interference

Home Team Academy @ 15

THE LEADERSHIP INTERVIEW

"The leader must have this strong sense of purpose and mission in the work, to the extent that they must love the mission and the work more than they love themselves. Because when you love the job more, then you also love the people, you will take care of the people, and look after them with an enabling mindset."

SHIE YONG LEE
Commissioner of Prisons

HOME TEAM JOURNAL

The *Home Team Journal* is a publication by the Home Team Academy in collaboration with the Ministry of Home Affairs of Singapore and its departments, which are collectively known as the Home Team. It is a journal by practitioners and researchers for practitioners and specialists in safety and security.

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FOREWORD

Across the developed world, around half of people say that they trust their national government.[1] And yet, trust in public institutions has never been more crucial in the current pandemic, which requires countries to harness vast resources, including social capital and citizen support, to deal with the resulting socio-economic challenges, and ethical dilemmas.

Trust can easily be eroded by perceived inequities and inefficiencies. While many global surveys show trust in Singapore's key government institutions to be high year on year, polling by the Institute of Policy Studies in late 2021 showed Singaporeans' trust in their government's ability to manage Covid-19 falling as the number of community infection cases surged to a record high.[2]

This is why the Home Team pays great attention to public perception surveys that disclose how much Singaporeans trust our officers to perform their duties professionally and fairly with integrity. As Minister for Home Affairs and Law, K Shanmugam, has said, "Trust is absolutely critical, and the fundamental currency of our work."[3]

The late American statesman, George Shultz, drawing from the lessons he learnt over a century, put it more starkly: "When trust was in the room, whatever room that was — the family room, the schoolroom, the locker room, the office room, the government room or the military room — good things happened. When trust was not in the room, good things did not happen."[4]

The Home Team has always enjoyed high **public trust**. The annual Gallup Global Law and Order Report, which measures the people's sense of security and their experiences with law enforcement agencies, has ranked Singapore first for several years now. Yet our departments are constantly looking at how they can strengthen the public's confidence in their ability to do their job well. In 2020, Eunice Tan and Charmaine Lee of the Home Team Behavioural Sciences Centre (HTBSC) won the Chris Hatcher New Vision Award for their work on "Conceptualising a Working Model of Intra-Organisational Trust and its Impact on Public Trust in Security Services". Given out at the 2020 Society for Police and Criminal Psychology conference, the award demonstrates thinking that will advance the field of police and criminal psychology.

I am pleased that Eunice and Charmaine have, with a colleague, expanded their presentation into an article for the *Home Team Journal*. They looked at how organisations maintain and even strengthen public trust in the modern-day context of social media use and rising public expectations. To achieve this, they urged organisations to work on improving trust within, as employee sentiments and organisational culture also shape public trust. And since this is a journal by practitioners for practitioners, they offer 12 practical tips for how Home Team leaders and officers can build trust within and beyond the Home Team.

Building on the model they propose, a team from the Singapore Police Psychological Services Department have identified several factors that influence trust between leaders and their officers in a policing context. Leaders who inspire trust will build effective organisations. An effective police department inspires public trust.

Often, however, the only way to know whether we are building public trust effectively is to read public sentiment accurately, for which we need to collect quality data using methodologies that do not

introduce bias. Polls are not an end in themselves, as a polling specialist and our own Home Team behavioural scientists remind us in an article on "How to Collect Quality Public Sentiments to Foster Public Trust." But accurate polling can help alert governments to emerging issues and improve policy-making and thus build trust with the people.

Trust is a theme that runs through most of the articles in this issue, whether on securing cyber systems where "zero trust" is the new catchphrase, working with foreign parties in a humanitarian crisis, or preventing children from being molested by caregivers.

Trust can also be misplaced, for instance, in the wrong information sources. In Singapore, the government now has legal powers to protect the public from being manipulated by disinformation spread by hostile foreign actors with the passage of the Foreign Interference (Countermeasures) Bill (FICA) in October 2021. It is thus timely that **The BSC Brief** for this issue of the *Journal* examines the issues that make Singaporeans vulnerable to foreign interference, and explains the psychology behind the tactics commonly used by hostile foreign entities in information warfare.

Increasingly, Home Team departments are also using evidence-based practices to deliver optimal performances in missions as diverse as emergency medical services and correctional rehabilitation.

This issue of the *Journal* also marks the 75th anniversary of the Singapore Prison Service, the 50th anniversary of the Central Narcotics Bureau, and the 15th anniversary of the Home Team Academy. Please join me in congratulating the staff and leaders of these departments.

Last but not least, let us also celebrate the achievements of the women in the Home Team. The Singapore Government designated 2021 as the "Year of Celebrating SG Women" and has been spearheading a nation-wide review of gender equality. I am pleased that the *Journal* has had the privilege of speaking to Commissioner of Prisons, Shie Yong Lee, for **The Leadership Interview**. The first woman to head a Home Team department, Commissioner Shie is proof that in the Home Team, it is, as she says, "the case of who is the best man or woman for the job."

ANWAR ABDULLAH
Chief Executive, Home Team Academy

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[1] OECD. (2021). *Trust in Government*. Organisation for Economic Co-operation and Development. Retrieved from https://www.oecd.org/gov/trust-in-government.htm. Singapore is not a member of the OECD although it adheres to many of its regulatory frameworks.

[2] Heijmans, Philip. (2021, December 2). Faith in Singapore Leaders Hit by Record Covid Wave, Poll Shows. *Bloomberg*. Retrieved from https://www.bloomberg.com/news/articles/2021-12-02/faith-in-singapore-leaders-hit-by-record-covid-wave-poll-shows

[3] Sun, David. (2021, May 19). Trust is the 'fundamental currency' of Home Team work: Shanmugam. *The Straits Times*. Retrieved from https://waww.straitstimes.com/singapore/trust-is-the-fundamental-currency-of-home-team-work-shanmugam

[4] Shultz, George P. (2020, December 11). The 10 most important things I've learned about trust over my 100 years. *The Washington Post*. Retrieved from https://www.washingtonpost.com/opinions/2020/12/11/10-most-important-things-ive-learned-about-trust-over-my-100-years/

STRENGTHENING PUBLIC TRUST BY BUILDING TRUST WITHIN AND BEYOND THE HOME TEAM: TWELVE TIPS FOR LEADERS

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ABSTRACT

Recent global events such as the Black Lives Matter protests in the United States have cast a spotlight on the importance of public trust in institutions. These events, which have far-reaching impacts, raise the question: How can organisations maintain and even strengthen public trust in the modern-day context of social media use and rising public expectations? When faced with such a question, organisations and their leaders tend to centre on the direct relationship between the organisation and members of the public. Often overlooked is the significant impact that sentiments and dynamics within the organisation can have in shaping public trust. This article delves into how trust within the organisation is critical to, and can significantly impact the trust that the public has in the organisation. Key facets of intra-organisational trust are explored through case examples such as Taiwan's response to the COVID-19 pandemic when it first began, and the Facebook virtual walkout in 2020, to highlight lessons on trust-building within organisations. Some challenges such as the role of technology and social media in trust-building are also discussed, and practical tips and tools provided for Home Team leaders and officers to build trust within and beyond the Home Team.

This article builds upon a presentation by Eunice Tan and Charmaine Lee on "Conceptualising a Working Model of Intra-Organisational Trust and its Impact on Public Trust in Security Services" at the 2020 Society for Police and Criminal Psychology conference. It won the Chris Hatcher New Vision Award given to the presentation that best demonstrates thinking that would advance the field of police and criminal psychology.

TRUST – HARD TO BUILD BUT EASY TO BREAK

Trust takes years to build, but is easily broken in seconds and may never be fully recovered. This is especially so for institutions or organisations, where the expectations of responsibility and trustworthiness may be set higher given the impact that their systems and actions can have. The loss of trust and failure to repair trust can escalate the situation negatively and lead to far-reaching impact.

Take, for example, the allegations of sexual misconduct against a lecturer at the National University of Singapore (NUS) in October 2020. NUS had dismissed him after two students lodged complaints against him but did not share the information with staff and students in "a more open and timely manner" (*Today Online, 2020*). While the emergence of the allegations may have threatened the trust in NUS, it was what transpired after the dismissal that seemed to have deeply impacted the trust that both students and members of the public had in the institution. Ranging from vague explanations to the students, to the lodging of a police report against the wishes of the victims, NUS' response to the situation drew backlash from individuals and groups within NUS. This included the student-run group, Students for a Safer NUS (SafeNUS), taking to Facebook to call out NUS for its "sparse" management of the

situation. A number of external stakeholders also spoke out on this issue, including the Association of Women for Action and Research (AWARE) which criticised NUS for going against the wishes of the students in making the police report (Ganapathy, 2020).

Beyond trust that external stakeholders place in the organisation, the trust of internal members, especially employees, is also critical in supporting the organisation's functions. Outside of their primary work roles, employees may have dual or multiple other roles that can in turn influence the way they perceive the organisation. For instance, much as teachers are staff of the educational sector, they are also parents of students in the education system, and much as law enforcement officers are employees of the security sector, they are also consumers of law and order services. As such, internal members' trust in the organisation is not just an internal issue but can potentially spill over to impact on public perception.

In the case of NUS, students of the school would likely bring with them the personal experiences they had in NUS after they graduate and go on to become fully external stakeholders. Their experiences then shape their perspective of the trustworthiness of the institution, for better or for worse. This is but one way that intra-organisational trust can impact public trust.

RESEARCH ON INTRA-ORGANISATION TRUST

This article seeks to deepen the Home Team's understanding of this often overlooked relationship between intra-organisational trust and public trust in view of three key reasons:

1. Challenges faced in the Public Service and Home Team context

The Home Team necessarily relies on close partnerships with the community to effectively achieve its aim of serving the public and keeping Singapore safe (Ministry of Home Affairs, n.d.). This is because a large aspect of the Home Team's work involves close interactions with the public. Moreover, the sense of safety as perceived by members of the public is partly subjective. How Home Team officers perform their roles affect public trust. For example, a disgruntled officer (due to low intra-organisational trust) may carry out certain procedures involving members of the public without explanation or assurances. This may, in turn, cause the members of the public involved to be confused and offended by the process and treatment, affecting public trust.

There is a large number of transient members entering and leaving the Home Team (e.g. both current and operationally ready National Service (NS) men, vendors, contract staff). As these transient members are both part of the Home Team and members of the public, there is a greater potential for intra-organisational trust perceptions to have spillover impacts on public trust perceptions.

2. Positive impact that intra-organisational trust can have on operational effectiveness

Intra-organisational trust is essential for maintaining high standards of work performance and organisational processes (Bienkowska et al., 2018; Connell et al., 2003; Stouffer & Mantle, 2008; Zak, 2017b). As a considerable part of the Home Team's work is public-facing, high levels of intra-organisational trust mean better service for the public.

3. Emerging trends and challenges brought about by rapid digitalisation

With the extensive use of technology and social media in today's era, especially for the younger generation, feelings of distrust can be easily expressed and gain traction on social media platforms. This could influence or polarise public views and sentiments, potentially causing unwanted and unwarranted spread of distrust among the public.

This article will delve briefly into the understanding of trust and intra-organisational trust, and the factors that impact on these levels. Practical takeaways on developing and maintaining intra-organisational trust contextualised to the Home Team will then be offered.

DEFINING AND UNDERSTANDING INTRA-ORGANISATIONAL TRUST

What is Trust?

Based on a review of existing definitions of trust in the literature, trust can be defined as:

Figure 1. GRACER model of intra-organisational trust

> *…the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform actions important to the trustor, irrespective of the ability to monitor or control the other party (Mayer et al.,1995).*

In the context of public trust, the party willingly made vulnerable would be the trustor (i.e. the public), while the party in control would be the trustee (e.g. organisations). In the context of intra-organisational trust, the trustors usually refer to members of the organisation while the trustees usually refer to the organisation as a whole.

Intra-organisational trust can be further understood in its two different forms:

1. Specific trust: Trust in which the target of trust is a specific organisational member such as a peer or immediate supervisor.

2. Generalised trust: Trust in which the target of trust is more general such as the upper management and the organisation as a whole.

This distinction is key as the measures recommended to develop specific trust can differ greatly from the measures taken to develop generalised trust.

WHAT AFFECTS TRUST IN THE ORGANISATION – THE GRACER MODEL

The existing literature, viz. the Ability-Benevolence-Integrity (ABI) framework by Mayer et al. (1995), identification-based trust by Lewicki and Bunker (1996), the transparency factor by Pirson and Malhotra (2011) and the trust reciprocity factor by Isaeva (2018), provide several models and factors related to trust. This article proposes a model of intra-organisational trust for the Home Team – the GRACER model – that comprises six factors of intra-organisational trust building, as shown in Figure 1.

Trustee-Associated Factors

Behaviours or characteristics of the trustee (e.g. the organisation) that shape perceptions

Factor		Definition
Goodwill (Benevolence)		The perception that the organisation has genuine care and concern for the trustor's wellbeing (Mayer et al., 1995).
Relevant Information (Transparency)		The perceived willingness to share trust-relevant information with vulnerable stakeholders (Pirson & Malhotra, 2011).
Ability (Competence)	Managerial Competence	The expertise, knowledge and skills required to manage people in an organisation and make strategic decisions (Pirson & Malhotra, 2011).
	Technical Competence	The expertise, knowledge and skills required to carry out one's role in delivering high quality services/products (Pirson & Malhotra, 2011).
Common Interest (Identification)		The understanding and internalisation of interests or goals of the trustors (Lewicki & Bunker, 1995).
Ethical Behaviour (Integrity)		The perception of whether the organisation is honest, and of requisite moral character (Mayer et al., 1995).
Reciprocity (Mutual Trust)		The perception of whether the organisation trusts its trustors (Isaeva, 2018).

Table 1. Trustee-associated factors in intra-organisational trust building

of how trustworthy it is. They can be deemed the most salient factors in trust development for organisations, mainly because these factors are within the control of the organisation and its leaders. These factors are subsumed under the GRACER model of intra-organisational trust - Goodwill (Benevolence), Relevant Information (Transparency), Ability (Competence), Common Interest (Identification), Ethical Behaviour (Integrity), and Reciprocity (Mutual Trust), as defined in Table 1.

IMPACT OF INTRA-ORGANISATIONAL TRUST ON PUBLIC TRUST

The impact of intra-organisational trust goes far beyond the organisation itself, with potential spillover effects onto the public and other external stakeholders, which can in turn affect public trust. There are a few ways in which this connection between intra-organisational and public trust may manifest.

Firstly, the behaviour of Home Team officers in public can directly affect public trust. Actions such as non-compliance, misconduct, or criminal acts by officers can greatly tarnish the reputation and trust the public has in the Home Team. This can be mitigated by developing and maintaining intra-organisational trust as it has been shown that a strong intra-organisational trust promotes officer compliance, professionalism, as well as engagement with the community (Tyler, 2011; Tyler & Degoey, 1996; Wheatcroft et al., 2012; Skogan & Hartnett, 1999; Wood et al., 2004).

Secondly, the dual identity of transient and long-term members of the organisation (e.g. National Service Full-time officers) can indirectly impact public trust through the experiences that these organisational members carry with them beyond work and/or when they leave the organisation. There have been instances where organisations have been called out on the difference between how they treat their employees and what they promote or tell the public. For example, Ben & Jerry's have sought to showcase their commitment towards reparations for slavery by publicly announcing on their website their support for the H.R. 40 bill – which looks to set up a commission to examine what can be done to achieve reparations for slavery – issuing a call for action to their consumers (Ben & Jerry's, 2019). They also have numerous other articles which were put up on their website in a bid to raise awareness on the topic among their consumers. However, in 2018, they were accused of subjecting migrant workers to harsh working conditions such as being housed in barns and unheated trailers before working 12 to 14 hour shifts without rest days, which eventually led to a protest by the workers against Ben & Jerry's (The Guardian, 2018). These incidents can have a significant impact on public trust, especially when they go viral on social media.

With such cases in mind, this article offers several practical recommendations for Home Team leaders to build and maintain intra-organisational trust, with these caveats:

- The recommendations serve as broad guidelines, but leaders should adapt them to fit the unique needs and context of their department/team.

- Beyond enhancing intra-organisational trust by targeting its key dimensions (i.e. GRACER), timeliness and consistency of any interventions should also be considered to ensure their effectiveness.

- Intra-organisational trust should be regularly assessed through both direct (e.g. verbal feedback from staff members) and indirect sources (e.g. anonymous employee engagement surveys) to inform the strategies developed and adopted to enhance internal trust.

- Other relevant outcomes of intra-organisational trust (e.g. employee engagement, public trust) should also be assessed to provide insights on the utility of any interventions intended to sustain or enhance intra-organisational trust

USING "GRACER" TO BOOST PUBLIC TRUST: 12 TIPS FOR ORGANISATIONS AND LEADERS

Increasing Displays of Goodwill

Goodwill is usually perceived by others as actions that convey, in a personal way, a sense of genuine care by the trustee (e.g. the leader or senior management) rather than a sense of authority. Leaders can exhibit goodwill by initiating personalised welfare and messages, as well as checking in with the trustors (i.e. members of the organisation) through formal and informal platforms.

An example of a demonstration of goodwill by a leader during the COVID-19 crisis would be that of the Prime Minister of New Zealand, Jacinda Arden, who livestreamed from her home through Facebook Live to address the concerns and questions of the New Zealand community about the strict lockdown measures in place at that time (CNN, 2020). During the session, she was dressed casually and adopted a highly personal tone, saying, "Excuse the casual attire, it can be a messy business putting toddlers to bed so I'm not in my work clothes." She also acknowledged the personal and relatable challenges faced by the people staying at home (e.g. disrupted social life and work routines). These actions served to convey her understanding and empathy of the challenges faced by the community during this testing period.

Her empathetic communication along with the informality of the livestream communicated a sense that she was together with all the other members of the community in this crisis, rather than above them. This led to positive responses from the people, evidenced by an increase in trust in her as a PM and in the New Zealand government (Friedman, 2020; McGuire et al., 2020). One poll cited by Friedman (2020), who called her "the most effective leader on the planet", found that 88% of New Zealanders trust their government to properly lead them through the pandemic compared to the average of 59% among the G7 countries, including the United States (Friedman, 2020). However, it should be noted that the key point of Goodwill is an authentic display of care and concern towards staff. It is thus recommended for leaders to do so in a manner that is consistent with their authentic leadership style. Such actions and images portrayed may instead backfire if there is a large discrepancy in how the leader is acting compared to their usual demeanour. While this example is more closely linked to public trust, for the leader of a country, the public is akin to members of the organisation, and thus the learning lessons here are still relevant for developing intra-organisational trust.

Two simple tips and examples are suggested in Table 2 on how communications can be leveraged to not just disseminate key messages but also convey a sense of genuine concern to further bolster trust. It would also be beneficial for leaders to consider incorporating these tips into varying modalities such as written or video forms of communication.

Communicating Relevant Information

Relevant information – or Transparency – relates to the sharing of relevant information

	Recommendation	Brief Example(s)
1	Include personal elements and emotive language	Include some use of the first-person language, e.g. I, instead of entirely impersonal, passive language such as 'it is thought that…' (Silberston, 2020). Statements of personal emotional sentiments, e.g. sharing disappointment, beyond covering facts (Forbes Coaches Council, 2020).
2	Reduce formality in tone and choice of medium to communicate	Use of contractions – such as it's, can't, they're – to sound more relatable (Silberston, 2020). Use of newer media platforms like Facebook Workplace and Microsoft Teams rather than emails, in particular when communicating with younger staff members. Sending email communications through a personal rather than generic email account.

Table 2. Tips on how communications can be enhanced to display goodwill

to each stakeholder in a timely manner, as well as recognising gaps, challenges faced and/or shortcomings. Beyond sharing relevant information, it is also key to supporting officers in making sense of the information if it can potentially lead to misperceptions or negative reactions.

This is especially so during the current information era where the rate of information transfer can be almost instantaneous and almost anyone can access various sources of data/information directly – this means that expectations of timely and accurate information have drastically risen. Moreover, the proliferation of misinformation has further heightened the need for relevant information to be disseminated as quickly and accurately as possible to prevent less-than-accurate alternatives from taking root; research has shown that even when misinformation is countered with facts, many people still hold on to their initial false beliefs (Kolbert, 2017). In our current context, withholding information becomes an increasingly risky course of action due to the increased likelihood of information leakage and the potential for negative perceptions to spread rapidly, hence leading to significant, long-term erosion of trust. It is thus recommended for leaders to be open, authentic and swift in communicating relevant information.

For example, NZ Prime Minister Jacinda Ardern communicated relevant information to the people by detailing the rationale behind the lockdown and paying extra attention to providing an accurate account of the number of cases, tests, recoveries, and deaths. This information is important for the people to understand the necessity for the lockdown, and to highlight the urgency and purpose of staying home in order to save lives. Being open with relevant information resulted in the people being more trusting and compliant with the lockdown.

On the flipside, leaders who do not provide relevant information to their staff risk having their motives in intentionally withholding information questioned, which can create an environment of suspicion and self-preservation, ultimately eroding trust in the management and larger organisation (Forbes, 2018). Table 3 provides two ways for communicating relevant information, along with brief examples.

Enhancing Displays of Ability

One of the aspects that officers look out for in their leaders to ascertain their trustworthiness is the leader's ability or competence. A leader's ability can come in two forms:

1. Technical ability – the expertise, knowledge and skills required to carry out one's role in delivering high quality services/products.

2. Managerial ability – the expertise, knowledge and skills required to manage people in an organisation and make strategic decisions.

	Recommendation	Brief Example(s)
3	Frame information in a simple and direct way	Use of short statements with simple language instead of lengthy sentences containing unnecessary technical terms to communicate each key point. Use of formatting tools like numbering and tables to further structure information into easy to follow bites.
4	Communicate early and provide updates regularly	An interim update on the incident at the earliest possible instance detailing the status and actions taken, and information gaps that are being filled. Consistent and paced updates of an appropriate length (e.g. the more frequent the updates, the more concise the information should be) to alleviate emotions like anxiety.

Table 3. Tips on how relevant information can be communicated for transparency

If leaders are unable to exhibit technical expertise and/or managerial skills, they will quickly lose credibility with their officers. To prevent this, leaders must not only look to proactively put themselves in situations where they can demonstrate their competence, they must also possess a growth mindset and constantly seek to upgrade themselves both technically and managerially through developmental interventions. This will ensure that leaders inspire confidence and are trusted to be able to overcome challenges and meet the evolving work demands expected of them.

For example, following the SARS outbreak in 2003 (Chen et al., 2005), Taiwan initiated a series of reforms related to controlling infectious diseases such as the centralisation of a command system under the Central Epidemic Command Center (CECC) should something similar occur again (Chen, 2021). When the COVID-19 pandemic first sparked off in Wuhan, Taiwan was quick to adopt preventive measures, immediately quarantining those entering the country through inbound flights from Wuhan and activating the CECC soon after. To guard against panic buying of masks, companies were also mobilised promptly to boost mask production, and distribution was done via a name-based system. Taiwan's experience with SARS allowed it to mitigate the impact of the COVID-19 pandemic, and despite a surge of cases in May 2021 due to the Delta variant, Taiwan managed to contain the wave, with a 7-day daily average of eight new cases and zero new deaths by 17th September (Tiberghien & Zhao, 2021). Taiwan's actions showcased their technical ability to handle the pandemic as well as a growth mindset where they leveraged past lessons. As a result, President Tsai Ing-Wen's approval ratings have mostly bounced back up to where it was before the surge, showing a recovery of trust in her capability to combat the virus (My Formosa, 2021). Similar to the previous example of PM Ardern, the leadership lessons in this example are relevant to both public and intra-organisational trust development and maintenance. Table 4 presents two simple tips for enhancing displays of ability to build intra-organisational trust.

Leveraging on Common Interests

As with the axiom, birds of the same feather flock together, leaders should build on shared values and goals in internal messages to foster a common identity that can bridge differences in other aspects. Various research models (e.g. Robber's Cave Experiment, Social Identity Theory, and Identification-based Trust) have shown that when there is an alignment of superordinate goals and mutual interests, a common ground is created which can then be used as a basis for group cohesion and trust (Ashforth & Mael, 1989; Lewicki & Bunker, 1996; Sherif, 1954, 1958, 1961). On the flipside, the lack of a sense of shared aims and interests could result in a sense of alienation and disillusionment, leading to the sentiment that the organisation does not care for their interests, potentially breeding ill-will and distrust (Isaeva, 2018).

DHL's actions during the COVID-19 pandemic are a fitting example of an organisation that adapted to the new expectations of employees as the situation evolved. Following the pandemic, many

	Recommendation	Brief Example(s)
5	Create more opportunities for leaders to demonstrate competence	Providing more regular check-ins and opportunities for officers to consult and ask questions (e.g. Ask-Me-Anything sessions) (Kruse, 2021). Providing guidance and regular engagements during new officers' onboarding (Brower, 2020).
6	Bring in third-party experts with high credibility to increase competence of management	Collaborations with relevant third-party experts (e.g. public-health experts in the case of pandemic-management) on projects to develop leaders' knowledge and also increase the efficacy of the project (Diermeier, 2020).

Table 4. Tips on how displays of ability can be improved

organisations transitioned to work-from-home arrangements, which raised for workers issues of balancing between taking care of their family members (e.g. children, elderly) and their work. DHL then decided to conduct a company-wide survey to understand the needs and concerns of its employees and acknowledged the difficulties those with families were going through. DHL put out a poster (see Figure 2) to inform employees that the organisation supported and encouraged them to put their family first. This reflected DHL's consideration of the shifting values of employees in the current climate and its efforts in pivoting the organisation's norms to promoting a stronger alignment with their employees. The poster's tagline – "Our People. Our Family." – also helped to build a shared identity by framing all members of DHL as part of a cohesive family (Fredericks, 2021).

Table 5 presents two tips for leaders to better leverage and build on common interests, values and goals to foster a greater common identity and trust.

Figure 2. DHL's internal communications to support employees taking care of their families

Enhancing Perceptions of Ethical Behaviour

Ethical behaviour by leaders and the organisation is an important factor in determining trustworthiness as it provides officers the assurance that they will not be unfairly treated or pressured to act against their values or ethical code. Such ethical behaviour (e.g. acts of integrity, and keeping to one's promises) would not only increase trust in the organisation and its leaders to be fair and ethical, but also promote compliance and the mirroring of such ethical behaviours in interactions with external stakeholders such as members of the public (Heine et al., 2013).

In a recent case, Facebook CEO Mark Zuckerberg was faced with a virtual walkout staged by his employees due to his inaction on a number of controversial posts by former US President Donald Trump (Yurieff & O'Sullivan, 2020). To the employees, the posts had incited violence and spread disinformation, and Zuckerberg's inaction was perceived as an unethical behaviour (i.e. he was deemed to be condoning violence and disinformation being spread on the platform). Many of the staff also expressed their displeasure and disappointment in Zuckerberg and the organisation on social media. The key lesson here is that it is important for leaders to ensure that their

	Recommendation	Brief Example(s)
7	Articulate how organisational values are reflected in the officers' daily work	Regular newsletters celebrating officers who have exemplified the values of the organisation in exemplary ways, focusing on the process instead of the outcome. Communicating and highlighting how the values and goals of the organisation may present themselves in the current climate (Honigmann et al., 2020).
8	Gather feedback on personal goals and values	Using various channels such as feedback sessions, check-ins or surveys to better understand officers' current priorities and values (e.g. Home Team pulse surveys, employee engagement surveys, and morale sensing surveys for officers involved in COVID-19 operations) (Honigmann et al., 2020)

Table 5. Tips on how to better leverage on common interests

actions and decisions are perceived to be ethical and upheld by moral principles. This can then help to promote trust development and stability within the organisation. Table 6 below provides two tips on how leaders can better improve perceptions of their ethical behaviour.

Encouraging Reciprocity of Trust

Intra-organisational trust tends to be viewed as a one-way trust that officers have in their superiors or organisation. However, it is important for leaders to understand that trust operates both ways, and in fact, the act of leaders demonstrating trust in their officers can in itself influence the levels of trust that officers place in them and in the organisation. Reciprocal trust or mutual trust relates to the demonstration of trust by the trustees – that is, the person(s) being trusted (Isaeva, 2018). In other words, to develop intra-organisational trust (where officers trust the management and organisation), leaders should first demonstrate trust in these officers. This can be done so through the leaders' direct actions, or through the systems and processes that leaders and organisations create.

In a research study by Sward (2016) on the collaboration between a team of client managers and a team of contractors, it was shown that when the clients demonstrated trust in the contractors (e.g. expressing good intentions and praise, not demanding compensation for mistakes), the contractors perceived the clients to be more trustworthy, and in return, demonstrated actions of trust in the clients (e.g. suggesting cheaper solutions, helping the clients when there were mistakes in planning). This study implied that trust is a two-way relationship, of which a higher level of trust shown by trustees can lead to reciprocation by trustors. It additionally suggested the value of reciprocal trust in promoting positive behaviours (e.g. providing assistance outside of job scope) among trustors. For the Home Team, these positive behaviours can come in the form of officers going the extra mile in their interactions with stakeholders, including external ones. This can, in turn, significantly boost public trust given

	Recommendation	Brief Example(s)
9	Highlight processes and structures in place to ensure fairness	Highlighting the corporate governance of the organisation's work practices and the checks and guidelines designed to ensure fairness in work practices. Having standard procedures and a framework for performance appraisals and developmental opportunities (e.g. promotions).
10	Role-model the code of ethics	Walking the talk in one's day-to-day work and holding oneself to the same standards in ethics as other officers (Hamil, 2019). Going the extra mile to ensure the safety and welfare of stakeholders and officers.

Table 6. Tips on how perceptions of ethical behaviour can be improved

	Recommendation	Brief Example(s)
11	Entrust officers with key decisions and roles to empower them	Empowering officers by appointing them to lead key projects, granting them the authority to make consequential decisions, or accepting and supporting their valid comments and ideas (Isaeva, 2018). Allowing officers a safe space for intelligent failures, i.e. failures that explore significant opportunities, provide deep learnings, with costs and risks that are known and can be mitigated (Cannon & Edmondson, 2004; Nordic Business Forum, 2021).
12	Use structures to macro-manage	Establishing and agreeing beforehand on ideal junctures for leaders to do check-ins with the purpose of driving progress and supporting officers. Developing a 'leader's playbook' that outlines the same key expectations for all members of the team across scenarios (Harper, 2021).

Table 7. Tips on how to demonstrate trust in officers

the multiple and frequent touchpoints that officers have with members of the public.

Leaders should also be mindful that the converse is true as well. If they do not demonstrate trust in the competence and commitment of their officers, this can ultimately breed frustration, dissatisfaction, and more importantly, distrust in the leaders in return (George, 2016; Leong, 2018). Table 7 presents two ways leaders can demonstrate trust in their officers.

CONCLUSION

This article has provided a brief introduction to intra-organisational trust as well as its six components, summed up by the GRACER model. Twelve simple tips, stemming from the six components, have also been provided for leaders to consider in maintaining and/or enhancing both intra-organisational and public trust, as summarised in Figure 3 below.

These recommendations are neither exhaustive nor hard and fast rules, but rather broad guidelines for leaders to consider. Adjustments should be made depending on the structure and context of the team and department. It is also paramount to recognise that trust development is not dependent solely on the trustee, in this case the leaders or organisations, but also on the trustors. Trustor-associated factors – i.e. characteristics of the officer that is doing the trusting (Isaeva, 2018) – such as propensity to trust (the innate tendency or willingness to trust others, Colquitt & Scott, 2007; Isaeva, 2018) and reliance on emotions (gut feel, intuition or instinct governing the tendency to trust others, Isaeva, 2018) can also greatly impact attempts to foster trust. Thus, the exact methods to develop and maintain trust in an organisation should be carefully planned out with consideration of the target trustors for the most optimal outcomes.

Public trust is indisputably an essential resource for the Home Team, without which the organisation would not be able to function and carry out its duties effectively. While the development of public trust should be kept at the forefront of any organisation's strategic considerations, intra-organisational trust should not be neglected, especially with its downstream effect on public trust. It is equally important for Home Team leaders to continue to foster and preserve trust both within the organisation and outside of the organisation to effectively carry out the mission of serving the public. As Minister for Home Affairs and Law K. Shanmugam said, "Trust is absolutely critical, and the fundamental currency of our work." Trust is a key currency that has to be invested in, both inside and out.

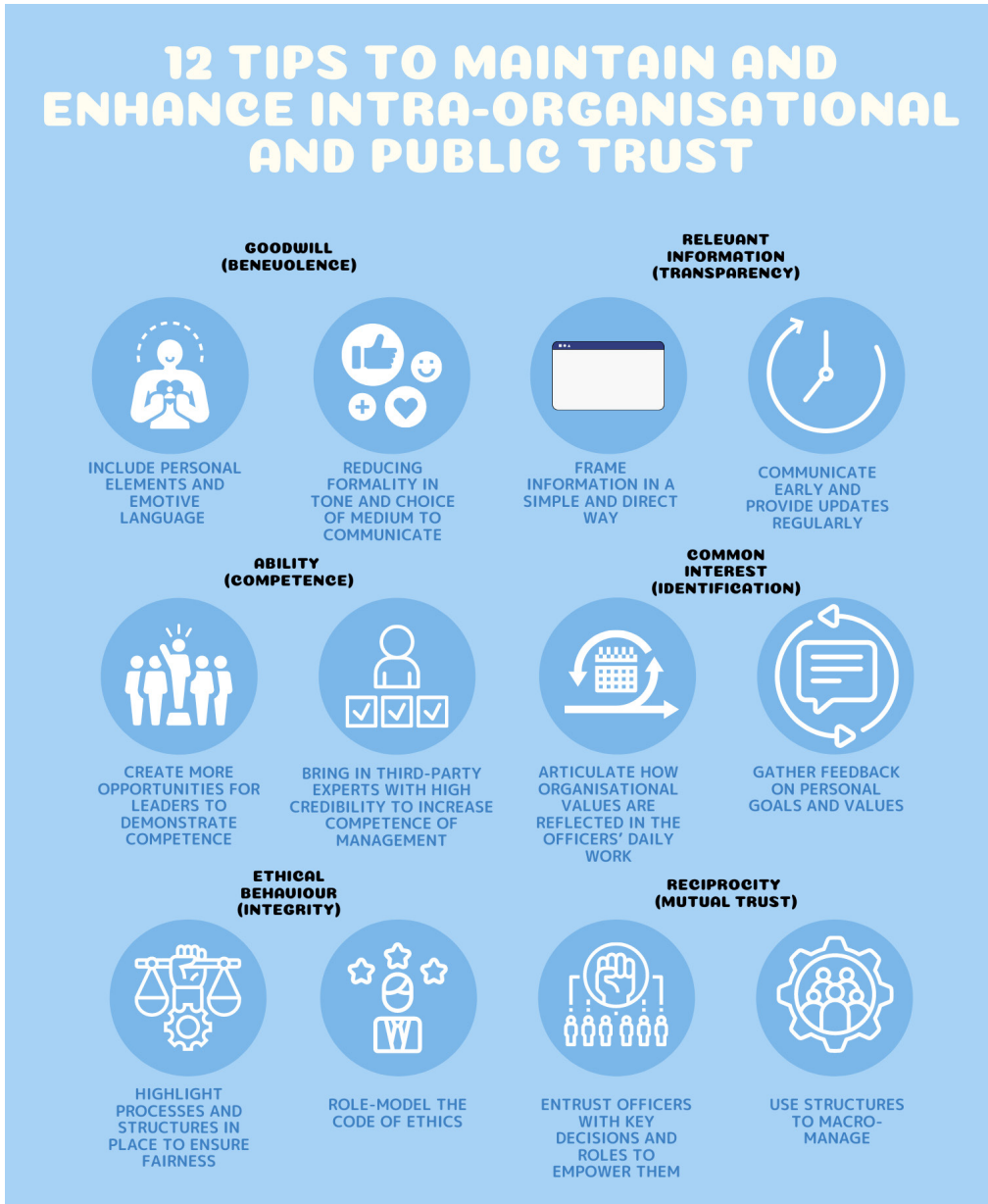

Figure 3. Infographic with tips for leaders to maintain and enhance intra-organisational trust.

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EFFECTIVE TRUST-BUILDING IN LAW ENFORCEMENT TEAMS:

INSIGHTS FROM POLICE LEADERS

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ABSTRACT

Intra-organisational trust is key in enabling strong organisational effectiveness. Employees who trust their leaders are more committed, satisfied, and productive. This article explores the factors influencing trust between police leaders and their officers in the Singapore Police Force. Through interviews conducted with police leaders, factors influencing officers' trust in leaders are unveiled. Leadership application of the insights and future research directions are discussed.

TRUSTING LEADERS

Trust takes years to build, but is easily broken in seconds and may never be fully recovered. This is especially so for institutions or organisations, where the expectations of responsibility and trustworthiness may be set higher given the impact that their systems and actions can have. The loss of trust and failure to repair trust can escalate the situation negatively and lead to far-reaching impact.

Take, for example, the allegations of sexual misconduct against a lecturer at the National University of Singapore (NUS) in October 2020. NUS had dismissed him after two students lodged complaints against him but did not share the information with staff and students in "a more open and timely manner" (*Today Online, 2020*).

FACTORS INFLUENCING TRUST IN LEADERS

Leaders play a pivotal role in building trust with their followers and in turn, the development of trust within an organisation. In theorising the pathways in the development of trust within organisations, Mayer et al. (1995) developed a model which identifies three main attributes that informs the perceptions of trustworthiness. In the case of a leader-follower relationship, this model proposes that a leader will be trusted to a greater or lesser extent through followers' inferences about the leader's ability, benevolence, and integrity, based on observations of his or her actions and practices. (refer to Figure 1)

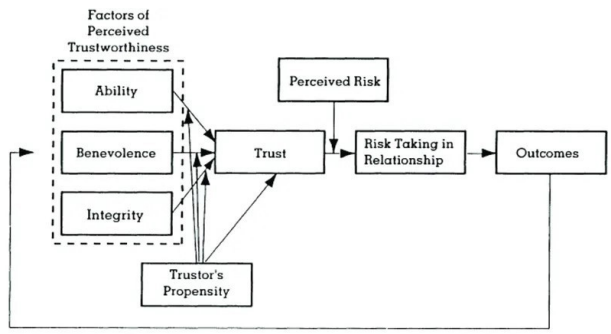

Figure 1. Proposed model of trust from "An Integrative Model of Organizational Trust" by R. C. Mayer, J. H. Davis and F. D. Schoorman, 1995, The Academy of Management Review, 20(3), p. 715. Copyright 1995 by The Academy of Management Review.

Ability refers to the skills, competencies and characteristics that enable an individual to have some influence within a specific domain. In this case, the trust afforded to the leader is task- and situation-specific in nature. *Benevolence* involves the belief that the leader cares for the subordinates and is not driven by any egocentric or opportunistic motives. Their behaviour connotes genuine care and consideration for the subordinate's welfare and interests and may imply some attachment to the subordinate. Finally, *integrity* generally tends to be judged based on the leader's previous behaviours, reputation, congruence between the leader's actions and the subordinate's own internal beliefs, and the consistency between the leader's words and deeds (Mayer et al., 1995).

In addition to the leader's perceived ability, benevolence and integrity, researchers have expounded on other behaviours leaders may engage in to build trust between themselves and their followers. In their analysis of managerial trustworthy behaviour, Whitener et al. (1998) identified two other forms of leadership behaviour that provide a foundation for employees' trust in supervisors namely, *sharing and delegation of control* and *communication* (e.g., accuracy, explanations, and openness).

When leaders share and delegate control, they are demonstrating trust in and respect for their followers by including them in decision-making through providing opportunities to voice opinions. Followers likewise feel valued and generate trust in their leaders when granted greater control over decisions that affect them (Whitener et al., 1998). Followers are also more likely to trust a leader who is accurate and forthcoming in their communications, provide adequate explanations and timely feedback on decisions, and demonstrates openness in terms of encouraging the sharing and exchange of thoughts and ideas freely with their followers. These leadership behaviours are echoed in the leadership research, as features of transformational and consultative leadership which are regarded as effective leadership styles with strong positive associations with trust (Bryman, 2004; Dirks & Ferrin, 2002; Gillespie & Mann, 2004).

CONTEXTUAL FACTORS IN TRUST BUILDING

Trust cannot be examined independently from the context within which the trust relationship exists. It is naïve to think of trust building by leaders without considering the context of the leadership behaviour – and this means the organisational climate, culture, and operating terrain as they shape the values and norms that may inhibit or support the extent to which leaders engage in the behaviours mentioned above. For example, hierarchical organisations characterised by a high degree of centralisation and formalisation, which prioritise efficiency, tend to inhibit open communication and to constrain the delegation of control in decision-making (Mayer et al., 1995; Whitener et al., 1998).

Similarly, the organisational climate arising from the norms of behaviours within the organisation can indirectly impact the development of trust through the perceived values of the organisation (Burke et al., 2007). In particular, the presence of perceived support and psychological safety within the organisation is likely to promote trust in leadership as followers are "respected, are not treated as scapegoats, and are encouraged to discuss errors" (Burke et al., 2007). Leaders who make intentional effort to practice and cultivate psychological safety within their teams may not only be more benevolent and enhance the development of trust, but the presence of psychological safety may also compensate for other leader characteristics that may be less ideal (Burke et al., 2007).

TRUST IN THE LAW ENFORCEMENT CONTEXT

The Singapore Police Force (SPF) is part of the Home Team and the Home Team has enjoyed high levels of external trust from the public and internal trust within the organisation. The Public Perception Survey conducted in 2019 reflected high public trust in the Home Team, with 91% agreeing that the Home Team keeps Singapore safe and secure, 89% trusting Home Team officers to carry out their duties objectively, and 89% trusting the Home Team to carry out their duties with integrity. In the Gallup Global Law and Order Report (2020), Singapore was ranked first for the seventh consecutive year on citizen's sense of security and their experience with law enforcement agencies. Internally, Home Team officers also expressed high levels of confidence in their colleagues' integrity and empathy for the public,

compared to the public service norm (Singapore Police Force, 2018).

THE "GRACE" MODEL OF TRUST

The current levels of public trust and intra-organisational trust in the Home Team and SPF cannot be taken for granted. An understanding of the trust development process and factors would provide good insights for maintaining high levels of trust. In 2020, the Home Team Behavioural Sciences Centre (HTBSC), through its research on public and intra-organisational trust, proposed a "GRACE" model of intra-organisational trust comprising five factors – goodwill, relevant information, ability, common interests and ethical behaviour.

Goodwill refers to the demonstration of genuine care and concern for the trustor's wellbeing through acknowledging their challenges and efforts, encouraging work-life balance and understanding their concerns in a psychologically safe manner (e.g., via morale sensing efforts). *Relevant Information* refers to the perceived willingness to share trust-relevant information with vulnerable stakeholders through the provision of relevant, useful information with clarifications to assist stakeholders in making sense of the information. Managerial and Technical *Ability* refers to the organisation's capacity to make strategic decisions and manage relations as well as its ability to deliver effective products and services respectively. *Common Interests* refers to an understanding and internalisation of interests / goals of the other through the demonstration of shared values and commitment and fostering a shared, common identity. Lastly, *Ethical Behaviour* refers to the perceived honesty and requisite moral character of the organisation through the alignment of actions with principles of organisational justice (e.g., distributive, procedural justice) and with key ethical principles (e.g., fairness) (Lee et al., 2020).

Research in intra-organisational trust conducted in corporate organisations, public sector organisations, and the Home Team are certainly useful in understanding the development of intra-organisational trust within the SPF. However, the influence of contextual factors, as highlighted earlier, suggests the need to look at research specifically conducted in law enforcement organisations, where the organisation tends to be more hierarchically organised, bureaucratic in nature, and where respect for authority, rank, and command are predominant.

TRUST IN THE DISCIPLINED SERVICES

In a qualitative study on police leadership from two British constabularies, Bryman et al. (1996) reported that officers tended to trust in the leader's direction and leadership if they can command situations, direct personnel and resources effectively, and lead from the front and by example (Bryman et al., 1996) as it lent them operational credibility and an appreciation of the difficulties faced by junior ranks (Rowe, 2006). Wheatcroft et al. (2012) found similar evidence that domain-specific contextual knowledge and previous operational experience were key factors in determining the extent to which senior officers were willing to trust their lead commander during the management of critical incidents.

Schafer (2010) surveyed police supervisors from the Federal Bureau of Investigation National Academy to understand traits and habits characterising ineffective police leadership, of which some had potential negative implications on the trust of their followers. Schafer reported that followers were less likely to trust a leader who was unpredictable in their decision making and could not be counted on to support them in contentious circumstances. Leaders who lacked the interpersonal skills to develop and maintain positive relationships with their followers were also perceived as distant, detached, and disinterested in connecting with their followers on a personal level, which led followers not to trust the leader. In a later study, Schafer (2013) also reported the importance of transparency in conducting operations, decision-making and related behaviours of leaders in the police services on the building of a high degree of trust between line officers and their superiors, which can serve to condition the external trust and transparency between the police force and the public.

Findings from research by the United States Air Force, which parallels some of the organisational features of law enforcement organisations, reveal the importance of commanders getting to know their airmen on a personal level as imperative for the rapid and effective building of trust (Stubbendorff & Overstreet, 2019). This can be achieved in several ways, not only through regular and consistent engagement and communication between the commander and airmen on the ground as a means of gathering feedback and displaying transparency in decision-making, but also connecting with them

genuinely and authentically through the commander's willingness to be vulnerable and empowering their men and allowing them to learn from mistakes.

While technical competence is important, research on police forces has found that police leaders who exhibit genuine care and concern for their officers' needs and aspirations, consult with officers in the decision-making process, and communicate with officers in a reliable and transparent manner (Bryman et al., 1996; Murphy & Drodge, 2004; Pearson-Goff & Herrington, 2013; Wheatcroft et al., 2012) are better at enhancing their trust relationship with officers. These leadership behaviours enhance officers' motivation to achieve beyond expectations as officers feel trusted and supported by their leaders.

INSIGHTS FROM POLICE LEADERS

Quantitative data from SPF has reported high levels of intra-organisational trust within the force. SPF scored highly on trust-related items in the Public Service Employee Engagement Survey (PS EES) 2021 as well as the previous PS EES in 2018. The overall trust category score in PS EES 2021 also improved from PS EES 2018. In addition to quantitative data, it is also instructive for leaders to understand qualitatively what helps police leaders in building intra-organisational trust. This exploratory study seeks to unveil the leadership behaviours influencing trust between police leaders and officers through interviews with police leaders on their personal experiences with trust building.

As trust-building is a complex social process, the authors believe a qualitative grounded theory method to be appropriate for obtaining first-hand accounts for developing further insights to existing theoretical frameworks drawn from the literature (O'Reilly et al., 2012), and allows us to contextualise the factors influencing trust emerging from these experiences of trust building. Hence, a semi-structured interview approach was selected for this exploratory study. To capture a representative sample of the various SPF units, five mid to senior SPF leaders with a mixture of specialist and line unit, specialist staff department and land division backgrounds were selected to participate in semi-structured interviews. Four of the leaders were Deputy Commander or Deputy Director, and one was a Chief Investigation Officer. During the semi-structured interviews, the SPF leaders recalled their experiences in the development of intra-organisational trust, both from the leader's as well as the follower's perspective.

Findings

The interview responses revealed five leader characteristics related to higher trust in leaders. However, before discussing these leader characteristics in detail, it is important to remember that organisational climate also affects the ability of the leader in building trust and helps set the tone for the overall intra-organisational trust climate.

Organisational climate in trust building

There was a consensus among interviewees that an organisation's trust climate may be enhanced by bolstering its psychological safety, such as when leaders demonstrate that officers are protected from "finger pointing", give guidance to navigate "minefields" when things go wrong and encourage officers to have open conversations with leaders about their shortcomings. This also helps to relieve some of the pressures that leaders face in needing to maintain a certain image and instead, enable them to navigate sensitive conversations with officers more effectively. Having a cooperative organisational culture between leaders and their peers could also prevent leaders from over-emphasising work efficiency over caring for the men, thus nurturing a more positive organisational trust climate.

Five leader characteristics that build trust

The key characteristics that emerged from the interviews as contributing to a leader's trustworthiness are (1) reliability, (2) transparency, (3) care and supportiveness, (4) vulnerability, and (5) knowledge and competency (refer to Figure 2 for a summary of the characteristics).

Reliability

A valued leader is one who holds true to their word even on minor issues. For instance, getting back to their officers' requests, and delivering on actions promised. In the words of the interviewees:

> *"... making sure that the communication loop is closed – understanding their concerns, attending to things they have raised up and that you are going to look into it."*

Figure 2. Leader characteristics that build intra-organisational trust

> *"… every single action you promise you follow up on with the officer, even if it is a negative or 'nil' response."*

> *"Most officers will remember what you say so try to commit to it without overpromising."*

Police officers are more likely to trust a leader when they observe consistency in what the leader says and do. This reflects the leader's perceived integrity, honesty and moral character (Mayer et al., 1995; Whitener et al., 1998). Consistency in a leader's words and actions is also an important reflection of a leader's authenticity and values (Bryman et al., 1996) and are illustrated in the following comments:

> *"If leaders walk the talk – people are watching you every day – what you say and do as a leader."*

> *"When we profess something, we should walk the talk."*

> *"Being consistent is important…. It's about (the leader) repeating the message and being authentic."*

Police leaders also need to behave in a consistent manner not only towards their officers and their superiors, but also in their guidance and treatment of day-to-day issues. This is demonstrated when leaders lead by example, which is another behaviour frequently mentioned by interviewees, and has been commonly found in the police leadership literature (Bryman et al., 1996; Bryman, 2004; Pearson-Goff & Herrington, 2013; Schafer, 2010):

> *"(The leader) walking the ground himself, knowing the issues well himself, making himself accountable for the decision he makes."*

Knowing right and wrong, trusting in their direction and decisions during crisis situations, as well as upholding the missions and core values – these are also seen as important aspects to building trust with officers and is consistent with the *Ethical Behaviour* factor in the GRACE model. This component of integrity is particularly relevant in the policing context for the building of trust as it helps create a sense of credibility in the eyes of the officers (Bryman, 2004; Pearson-Goff & Herrington, 2013) who may frequently be faced with grey areas in the frontlines.

Practising and modelling expected behaviours in a consistent manner as well as familiarising themselves with their officers' work are likely to lend greater credibility to the leader in that officers can expect the leader to behave in a particular fashion and can be trusted to stand by their actions (Dirks & Ferrin, 2002). Likewise, officers will also derive a sense of consistency in the leader's decision-making

and trust that he or she will be accountable for their decisions, irrespective of the outcomes. These elements of reliability are similarly mapped in the 'Personal Mastery' and 'Focusing on Mission & Vision' competencies of the SPF's Leadership Competency Framework (LCF).

Transparency

As in the *Relevant Information* factor in the GRACE model, communication and openness are also the two most apparent aspects of transparency cited in the interviews. Transparency in operations, decision-making and related behaviours allow officers to understand how their leaders make decisions and the nature of the relationship between the agency's leadership and frontline personnel to facilitate the emergence of trust (Schafer, 2010). A leader who communicates in an open, clear, and concise manner (e.g., "black and white") reduces ambiguity in their guidance and direction so officers will not be left confused about the course of action and helps to facilitate officers' learning. These aspects also relate to the "Communicating Effectively" competency in SPF's LCF.

Clearly communicating the rationale for the leader's decisions to officers is also seen as effective in building trust in officers, as apparent from the following comment:

> *"[…] command decisions that cannot be made (and) that cannot be communicated due to sensitivity (e.g., due to manpower issues) should also be made known."*

Sharing of information is also important for transparency and trust building (Hasche et al., 2021; Norman et al., 2010) as interviewees also warned that leaders should be mindful not to buffer too much information from the top and allow for more open exchange of information between the leader and officers. This also pertains to communications about internal policies (e.g., how officers are being ranked and promoted) or employee survey results, where interviewees felt it was prudent for leaders to communicate them to their officers as it may serve to offset potential negative effects on trust when disputes or disagreements occur (Norman et al., 2010; Korsgaard et al., 2002) between the officer and the leader:

> *"Many policies out there but many a time they are not discussed openly… but also as a supervisor they may not be savvy or exposed to it or have no interest in it."*

Similarly, if a course of action results in negative outcomes for officers, it is also important for leaders to convey the rationale for the consequences meted out to officers as it demonstrates sensitivity to important issues and to the ground, since matters concerning disciplinary standards and systems may be particularly stressful for police employees (Schafer, 2013):

> *"Conveying rationale for consequences for officers' actions and seeking understanding from officers that it is not about investigations or covering up but protecting the force as well."*

Care and Supportiveness

As captured in the 'Using Heartskills' and 'Unleashing People Potential' competencies of SPF's LCF, leaders should be mindful in treating officers as an individual and not a digit by being intentional in building relationships with officers individually and getting to know them on a personal level – not just a professional level. This "individualised consideration" is also an aspect of transformational leadership behaviour that signals support and care for officers and encouraging their development (Murphy & Drodge, 2004). This is akin to the *Benevolence* factor in Mayer et al. (1995) model and important in day-to-day interactions, as alluded to in the following comments:

> *"Some leaders think that being professional means keeping a distance or talking down to their subordinates. However, it is about treating them as a person and not just a digit in your department."*

> *"Competency is important when making crunch time decisions, but in non-crisis time, it's more about building relationships and you are invested in their development and time, that you care for them…"*

Leaders need to be sincere in their care and consideration of officers' welfare and interests. This may refer to leaders being intentional about carving out the time to help officers such as providing

relevant contacts in the organisation for officers to reach out to when necessary and providing relevant background and advice on how they can work with them. One interviewee illustrated this with an recount of how when his peers were promoted but not him, his supervisor personally apologised to him even though it was known that the supervisor had strongly endorsed his suitability for senior management:

> *"[It] doesn't have to be a grand gesture but making the effort to communicate what he couldn't do even though it wasn't a positive outcome."*

The notion that small sincere gestures go a long way to the building of trust with police officers surfaced repeatedly in the interviews. Interviewees suggested having protected time to get to know the officers on an individual level and allowing officers to drop the honorifics when addressing the police leader as ways to reduce the power dynamics. Leaders are also encouraged to balance task-orientation with having more relational exchanges such as during informal meetings. Leaders should practise active listening and be genuinely interested in what officers are sharing rather than be distracted with responding correctly. Leaders should ensure that their objectives are in line with the officers' interests. This could include having trust in your officers and standing by them in times of difficulty, by being present for officers. The interviewees also emphasised the importance of being a leader who protects officers when things go wrong:

> *"If you make a mistake, (the leader) will bite the bullet and take care of your interests."*

Interviewees reported that a leader who is sincere in helping officers and open in sharing their own personal experiences is more likely to be trusted. One provided this revealing example:

> *"Everyone was very tired following a late-night raid, but [I] saw [my] head of branch still working away in the office with [us] after that. He took care of [our] welfare by giving [me] $50 to buy food for everyone."*

When the same interviewee felt she had been undermined by a colleague on a separate occasion, she spoke of how her leader trusted her and stood by her during the ordeal:

> *"[She] knew I wouldn't do such a thing. During this time, my boss was tight-lipped and did not gossip about the situation."*

Vulnerability

Also relating to the competencies 'Personal Mastery', 'Using Heartskills', and 'Performing as a Team' in SPF's LCF, the notion of vulnerability was commonly cited by interviewees as key to developing trust as it creates opportunities for officers to connect with leaders on an emotional level (Ito & Bligh, 2017).

For leaders to lead with vulnerability, they must first be willing to be vulnerable themselves. Leaders should get comfortable with admitting that they do not know everything, be humble in noting when they fall short, and apologise if need be:

> *"… there are many things we don't know. We are not omniscient, and we should be humble to ask for advice even from subordinates."*

> *"Leaders admitting that they don't know everything."*

> *"Recognise you can be vulnerable, and you may make the wrong decisions…."*

By acknowledging imperfections, leaders are humanising themselves (Ito & Bligh, 2017; Stubbendorff & Overstreet, 2019) and creating opportunities to reduce the psychological power distance. In turn, officers would be more willing to approach the leader. This translates to increased psychological safety and greater trust in their leader.

One interviewee mentioned cultivating an "open door policy' within her unit as a way of modelling vulnerability and enhancing the psychological safety with her officers:

> *"[I set the precedent] that if they have a problem, rationalising why officers need to go to (me) early so that it helps (me) protect them to protect themselves. Reinforcing that culture that even before any issues arise, (I am) building that safe environment where if they have any issues they can come to me and even when they go to me, how I respond needs to be sincere."*

On a related note, leaders can also encourage their officers to practise vulnerability by fostering a developmental orientation and creating fail-safe environment for officers to learn. For example, when managing mistakes or failures at work, interviewees turned these lessons into learning opportunities for officers instead of fault-finding. Leaders could help officers understand why mistakes happen and provide learning, they noted, adding that leaders can take further steps to cultivate psychological safety through building up their "emotion vocabulary" and being comfortable in coaching officers at work:

> *"When something bad happens, the leader will also have to address the issue. Do not be afraid to correct them, but the approach is also important to ensure that they learn from it."*

> *"You want to correct people but you don't want to stifle people …. Giving the culture to do it and trust that the system will not enforce consequences as a result."*

> *"Giving (officers) the assurance that it is not finger pointing and that the leader will be backing me up."*

> *"Letting (officers) know that weaknesses are ok, celebrate them but at the same time offer them their strengths."*

In doing so, leaders encourage a learning environment where officers do not fear negative ramifications but promote help-seeking and admission of errors (Walters & Diab, 2016). This leads to a trusting relationship between leaders and officers. Interviewees suggested that leaders establish norms of open communication:

> *"Giving officers the autonomy to voice their opinions and concerns to the leader."*

> *"Leaders should be receptive to feedback, but there's an unspoken fear that they may get in trouble for talking to the leaders about their shortcomings."*

By being open to feedback from subordinates, leaders model an attitude of openness and fallibility, thereby establishing the conditions for building a culture of psychological safety and trust within their teams.

Knowledge and Competency

Interviewees spoke of the importance of having good technical knowledge. This is consistent with the *Ability* factor in both Mayer et al. (1995) and HTBSC's GRACE model and is likewise captured in the 'Personal Mastery' of SPF's LCF. Leaders must know standard operating procedures and where to find relevant resources. Officers trust their leaders' more when leaders possess clear awareness of the tasks and issues at hand. A leader's technical competence becomes even more important in crisis situations where decisions are made under pressure. Officers lose trust when leaders are not competent for their role.

Leaders should ensure they build technical competence through being on the ground with the officers, understanding the contexts, and knowing the job of their officers (i.e., can see from officers' perspectives and know the pain points), as exemplified in the following comment:

> *"Get your hands dirty, do the things your officers are doing"*

The same respondent shared a personal anecdote of his first uniform posting to a new division where he found operations-related functions and the various acronyms foreign to him having come from an investigations background. He thus made it a point to go down to all the site recces to observe how the officers did sweeps, as well as asking his operations officer to explain the various acronyms. This was echoed by another respondent who expressed the following:

> *"By getting on your subordinates' level to ask questions and not being afraid of making mistakes, it shows that you are trying your best to learn the ropes."*

It is perhaps inevitable that the individual foci may vary in the working relationship, with officers concentrating on more tactical and operational elements and the leader overseeing the broader strategic aims (Wheatcroft et al., 2012). Hence, the interviewees also suggest that leaders demonstrate a degree of confidence in the ability of their officers by giving them leeway to make their own judgment calls, with the leader providing "light-touch supervision" (Wheatcroft et al., 2012) when issues arise while not micromanaging:

"Your trust in officers is telling from the way you empower them."

"It's very telling of your trust in the leader when the first thing you think of after you do something is 'Am I going to be in trouble?. It dampens the officers' confidence when your boss doesn't trust you, and this becomes reciprocal."

Surprisingly, a leader's knowledge and competence – a main feature of instrumental leadership that has been found to be the most valued form of leadership by police personnel (Bryman et al., 1996) – received lesser mention as a factor for building trust in SPF. Rather, the police leaders interviewed cited relational leadership factors. This focus on relational practices suggests the importance of relational skills in police leaders, which goes beyond integrity and ability in fostering trust with officers, the latter two of which may already be an a-priori expectation for leaders to possess in established institutions (Lapidot et al., 2007).

RECOMMENDATIONS FOR LAW ENFORCEMENT LEADERS

The interviews identified five leader characteristics in building intra-organisational trust within the policing context (see Figure 2). The following are recommendations for leaders in their journey of trust building with officers (see Table 1 for summary).

Reliability

Leaders must keep their word. They should be consistent in embodying the values they wish to uphold. For example, saying that "we are here for you" might be a message of assurance that leaders hope to impart to officers, but the weight of such words quickly diminish when officers do not feel supported in times of need. Leaders should act and listen to their officers, seek to understand concerns, and work to resolve them to be "here for you". Leaders must stay true to their word as officers look to them to walk the talk, and trust is easily compromised when there is a lack of reliability and consistency from leaders.

Where possible, leaders should meet up with officers individually to discuss their personal and professional goals and take a collaborative approach in planning with them. By taking an interest in officers' development, leaders help assure officers they are valued individuals. This approach aids in trust building and perceptions of reliability as leaders. Leaders can do so by setting aside an hour or two to meet with officers in their office over coffee.

Transparency

Leaders can help officers understand and increase buy-in by articulating the rationale behind policies or decisions. People need meaning in their work and want to understand the rationale behind the decisions made and tasks assigned. While there is a need to strike a balance in sharing information, officers should know the rationale behind decisions as this prevents misunderstandings in the team. Leaders should be aware of ground sentiments so that the concerns of officers can be addressed in a timely manner. This can be through mass information-sharing sessions with officers (e.g., briefings or dialogues), personal messages broadcasted, or unit's internal communications channels.

Leaders must be transparent in terms of broadcasting career opportunities to all eligible officers. This includes matters such as internal or external postings, opportunities for training, and progression opportunities. By providing fair opportunities, officers feel appreciated and engender trust in their leaders. Being open fosters greater understanding between leaders and their officers and provides assurance to officers.

Care & Supportiveness

Leaders should encourage officers to upgrade. Doing so shows that they have officers' best interests at heart. Leaders should create a supportive culture of learning from mistakes and creating a safe space for open conversations. When things go wrong, leaders should not be too quick in fault-finding but take time to understand and listen. Leaders should listen actively, be receptive to feedback, and embrace learning from mistakes in the workplace. Leaders should exercise moral courage to stand up for officers if need be. These enhance perceptions of trust in leadership as officers find that their leaders can be trusted to hear them out, support them, and exercise fairness.

Giving credit where it is due goes a long way in showing care. Leaders should acknowledge good work done through, for instance, pat-on-the-back vouchers, commendations, or personal messages to recognise deserving officers. However, leaders must ensure that all officers can be recognised (e.g., frontline work vs. backend duties). When receiving praise for good work, leaders should credit their officers who were involved and highlight their individual contributions where possible. For example, leaders can keep officers in the loop on emails commending their work and publicly acknowledge officers' contributions. Policing is never a solo job and it is crucial to recognise that each officer's effort adds to the bigger picture of upholding the bigger mission in the SPF.

Leaders should foster a culture of care. Leaders should check-in with officers who are not doing well. Encouraging officers and supervisors to look out for one another can help to strengthen the culture of caring. Gestures like handwritten notes or asking, "how are you?" and taking the time to listen to each other can foster this sense of camaraderie in the teams.

Vulnerability

Leaders are not all-knowing, and it is wise to understand that being an effective leader means dissecting both one's successes and losses. Admitting to mistakes as a leader may not be the easiest thing to do but it is very important as it speaks of a leaders' vulnerability, trustworthiness, and responsibility. When leaders are honest about their shortcomings, this creates a trusting culture in the team. Leaders can engage in self-reflection and pen down occasional messages to officers to talk about learning points and thereby opening up the floor to feedback on what he / she could do more of. Holding fireside chat sessions would be helpful in engaging officers, and leaders could also bring up topics on personal challenges as points for learning. The willingness to admit mistakes adds to having a transparent and reliable leadership (e.g., openness in sharing information and leading by example) which are key antecedents to trust.

Practising vulnerability as a leader also means having trust in officers and empowering them to perform their duties independently, only providing supervision when necessary or for tasks with more critical implications. Although we may have a certain way of doing things, officers appreciate having a sense of responsibility and autonomy in their work, knowing that they have been entrusted to carry out their tasks. Though there should be regular check-ins to sharpen work processes, leaders should be mindful not to micro-manage officers. To empower officers is to show trust in them to perform their duties to the best of their abilities, and this is reciprocal as the officers themselves view their leaders as trustworthy.

Knowledge & Competency

Leaders should know their work enough to lead officers. Ask and learn from colleagues or subordinates as this speaks to one's sincerity to improve as a leader and nurture an environment that learns and grows together. It helps to stay curious by regularly upgrading one's skillsets through relevant courses and updating one's knowledge of new developments. In times of uncertainty, officers will feel more confident knowing that their leader is technically competent to lead, and this increases the trust in the leader's abilities and competency.

Finally, leaders should walk the ground which means being present during operations, training, and team welfare events. Officers notice whenever their leader is present. Showing leadership presence not only adds to one's visibility as a leader but is also a simple powerful gesture that conveys a leader's solidarity with officers. Walking the ground enables leaders to build better connections with their officers, identify issues which need attention, and understand ground concerns – all of which help to facilitate trust building with officers.

Limitations and Moving Forward

This article offers a preliminary scope of possible leadership characteristics that are important for building trust with officers within a law enforcement context. Some limitations of the study include the small interviewee sample, which may restrict the

Antecedent of trust	Recommendations
Reliability	• Leaders should keep to their word and embody the values. • Leaders should take a personal interest in the development of their officers by meeting with them to discuss their goals.
Transparency	• Leaders should help officers understand and increase buy-in by articulating the rationale behind policies or decisions made. • Leaders should be fair in terms of broadcasting career opportunities to all eligible officers.
Care & supportiveness	• Leaders should encourage officers to upgrade themselves. • Leaders should give credit where it is due and acknowledge good work done by providing rewards and recognition. • Leaders should create a supportive culture of learning from each other's mistakes and creating a safe space for open conversations. • Leaders should empower leaders under their charge to also foster a culture of care amongst officers.
Vulnerability	• Leaders should be open to admitting their mistakes and share so that officers can learn. • Leaders should empower officers to perform their duties independently, providing supervision when necessary. Be mindful not to micro-manage.
Knowledge & competency	• Leaders should ensure they know their work well to lead their officers. • Leaders should upgrade their skillsets. • Leaders should walk the ground and be present during team events, operations, training, and welfare gatherings.

Table 1. Summary of recommendations for Law Enforcement leaders in building intra-organisational trust

scope and generalisability of the findings. Future research could include more officers, including officers from other levels in the organisation as only senior and mid-level leaders were interviewed in the current study.

Moving forward, future research can enable the Police Psychological Services Department (PPSD) in SPF to continually inform and support the organisation and SPF leaders in efforts to maintain strong levels of intra-organisational trust. PPSD can also help SPF leaders to develop tools (e.g., survey questions) to measure trust.

CONCLUSION

Intra-organisational trust is a key construct underpinning organisational performance. Its implications are far reaching especially in a policing context, and this was further elucidated through the insightful interviews with SPF leaders whose experiences span various levels of seniority and areas of work. The findings in this article converge with the current literature on intra-organisational trust and is an important start to inform police leaders of some of the mechanisms of trust-building in a policing context, as well as practically, what they can do to strengthen intra-organisational trust in SPF and enhance organisational performance as a whole.

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ACCURACY IN POLLING AS A MEANS TO AN END:

HOW TO COLLECT QUALITY PUBLIC SENTIMENTS TO FOSTER PUBLIC TRUST

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ABSTRACT

The ability to collect quality public sentiments not only plays a crucial role in alerting the government to emerging issues, but also helps point to meaningful engagement with the masses and bridging the gap between the public and the government. Accurate polling can help the government better understand the public and so be better placed to build public trust. However, this is predicated on the assumption that a representative sample of the populace has been polled using proper data collection methodologies, the failure of which can introduce bias and threaten to weaken the validity of inferences drawn from these polls. This paper elucidates the challenges commonly associated with collecting public sentiments and discusses alternative approaches to mitigate these challenges.

POLLING AS A MEANS TO AN END

At the heart of the Singapore Together movement is the promise of the government to engage and partner with Singaporeans to shape Singapore's future. The engine and conduit of such engagements require the government to focus its attention on the nuances and opinions of the populace, which are collected via multiple channels such as public opinion polls, perception surveys, and dialogues. Such engagements serve to inform public policy decision-making, providing policymakers with information about what people are thinking, feeling, and doing, especially on issues that affect them (Chan, 2021). It presupposes accurate polling that helps the government better understand the public and so be better placed to build public trust.

A recent spate of unforeseen circumstances, which are mainly related to COVID-19, has altered our way of life. Hence, there is a growing pressure on the government to prioritise and increase public engagements to tap into the broader resources of the populace to identify emerging gaps and effects of the changes on the masses (Leong, 2020; Matasick, 2017). One of the key steps is the obligation to collect reliable and accurate information on public sentiment from various segments of society. This not only helps to instil public trust and confidence in the government's efforts to engage the masses, but it also underlines the commitment to include the collected feedback to develop better policies and, ultimately, bridge the plurality of voices.

The government holds serious responsibility as stewards of valid information, and it is this accountability and responsiveness that matters in fostering more trust. This notion corroborates what Kumagai and Iorio (2020) opined in a recent World Bank report: "low trust in public institutions is part of the reason why citizens do not engage,

and the lack of citizen participation in government decision making negatively affects performance and accountability, which leads to a decrease in trust" (p. 14).

However, the use of high-quality information on public sentiment to inform the government's efforts is predicated on the assumption that a representative sample of the populace has been polled using proper data collection methodologies; failure to do so can introduce bias and threaten the validity of inferences drawn from these polls. As a means to an end, it is essential to understand the challenges commonly associated with collecting public sentiments and explore alternative approaches to mitigate the effects of these challenges.

CHALLENGES OF COLLECTING QUALITY PUBLIC SENTIMENTS

The key to "good data" lies in how data is handled.

Good data: Sharing data and fostering public trust and willingness
World Economic Forum White Paper, April 2021

The collection of quality public sentiments is not a straightforward endeavour due to the challenges of measurements and their interpretation, and three are highlighted here.

1. Decreasing Response Rates

Researchers have used response rates as an indicator of quality of data collected (Krishnamurty, 2018). It reflects those who have participated in the survey when approached, and if response rates are high, the data is usually considered representative of the population (Groves et al., 2009).

Many observers (e.g., de Leeuw & de Heer, 2002; National Research Council, 2013) have voiced concerns that response rates to government household surveys have been decreasing in some developed countries. In North America, for example, between 1996 and 2007, the response rate of national-level surveys decreased annually by 0.65% in face-to-face surveys and by 2% in telephone surveys (Brick & Williams, 2013). Moreover, response rates differ across various modes of data collection. Nulty (2008) has noted that online surveys tend to achieve lower response rates than face-to-face surveys. In the local context, Leong (2020) has found that "as best practice, pollsters have to make at least 10 telephone calls to find one person that will pick up the phone".

There are many reasons for low response rates. They range from a decline in people's willingness to answer surveys (e.g., concerns about privacy and confidentiality, no trust in the surveys, previous feedback not taken seriously), their inability to comprehend the surveys (e.g., health conditions, the sensitivity of survey topics, overuse of jargon in the surveys), to the increased difficulty in contacting people for a survey (e.g., busier, more mobile phone users). Reasons such as these should be taken into account in order to increase the response rates.

This downward trend in response rates is a creeping issue that will substantially impact the quality of collected data in the long run. This can potentially introduce non-response bias into the survey results, where decreasing response rates increase the likelihood of a difference in opinion and attitude between non-respondents and respondents (Adams & Umbach, 2012; Berg, 2010; Sivo et al., 2006). Additionally, it is unsurprising that specific population segments (i.e., those more willing to participate in surveys) may have been oversampled, often at the risk of biasing the results. This is, therefore, a real-world challenge that is difficult to address. Sponsoring agencies thus have to make efforts to maintain the response rates by spending more money to contact more sample units and address people's concerns about participating (Campanelli et al., 1997).

2. Under-Representativeness of the Sample

Another challenge is the degree of representativeness of the sample selected from the population to accurately reflect the population of interest (Kumagai & Iorio, 2020; van Hoeven et al., 2015). This means that all subgroups in the population who systematically vary in attitudes, characteristics, etc., are likely to be included in the survey sample, thus assuring no or lower likelihood of biases in data (Meterko et al., 2015).

As our society matures and the populace becomes more diverse and sophisticated, it is vital for the government to be attuned to these developments (e.g., engaged individual versus the silent majority who may otherwise shun away; individuals expressing their opinions via social media; individuals who are apathetic to policies) and develop new strategies to ensure that the survey coverage achieves a representative sample.

Voluntary participation in the survey may also lead to biases – the willingness to participate may set the participants apart from non-participants (Cheung et al., 2017). While the silent majority may not be that different from those who volunteer, it is not advisable to assume so, or otherwise, and draw a straight line between them. Hence, as Leong Chan-Hoong, who has been principal investigator for several Singapore research studies, notes, "there is now a need to look beyond the convenient sample of participants, to look for the hard-to-get silent majority who may otherwise shun away from a government-led opinion poll" (Leong, 2020). Failure to do so may introduce bias (e.g., coverage error) and increase the chance that the eligible sampled units will differ from the population of interest (Education Development Centre, 2018). This, in turn, threatens the accuracy and quality of survey data. For these reasons, researchers should take great care in demarcating the characteristics and parameters used to identify the target population of interest.

3. Limitations of the Survey Methodology

Researchers need to recognise that the interpretation and analysis of the survey data may be affected by inherent shortcomings associated with the survey methodology. Firstly, perception surveys only capture the respondents' opinions and mere intentions, and are not an exact measure of their actual behaviour (Chandon et al., 2005; Neo, 2020). Overstated conclusions and unwarranted extrapolations based primarily on these opinions (which change over time) may undermine the process of policy decision-making.

Secondly, demo¬graphics of respondents may affect the outcome of the surveys. For example, studies have found that Asians (compared to Westerners; Yiend et al., 2019) and older audits (compared to younger respondents; Fung et al., 2019) tend to exhibit a cognitive bias towards processing positive over negative information. In other words, such demographic features blur the validity of the responses and continue to pose challenges to obtaining high-quality survey data. Thus, researchers should recognise these limitations when they are analysing the survey data.

ALTERNATIVE APPROACHES TO ACCURATE POLLING

The three challenges mentioned above are not exhaustive but could serve as a basis for further discussion. These real-world challenges underscore the importance of investing resources to minimise their biasing effect on the validity of inferences drawn from the survey data. More importantly, these challenges underscore our appreciation for quality data collection and force us to identify alternative approaches to avoid biases in the data sets. This section seeks to highlight four techniques of interest.

1. The Use of Machine Learning Techniques

The explosive growth of data produced due to the internet and mobile technologies can enable policymakers to make more informed decisions by drawing upon such information. Some countries have mined reviews for feedback on smart government applications (Areed et al., 2020), public sentiment towards welfare schemes (Kaur et al., 2021), and even citizens' attitudes towards government agencies (Umali et al., 2020). In Singapore, the public sector should harness data as a strategic asset for fostering public trust and providing key services. For example, local researchers have carried out these projects:

a. A research team mining insights from noise complaints and their association to a new bus route on housing price found a 3% price reduction with a 1-scale-point increase in noise complaints due to the bus route (Fan et al., 2021).

b. During the Singapore Presidential Election in 2011, 16,616 tweets were analysed using sentiment analysis to (i) assess the huge amount of data, (ii) develop the machine learning methodology, and (iii) predict the incumbent president using the garnered

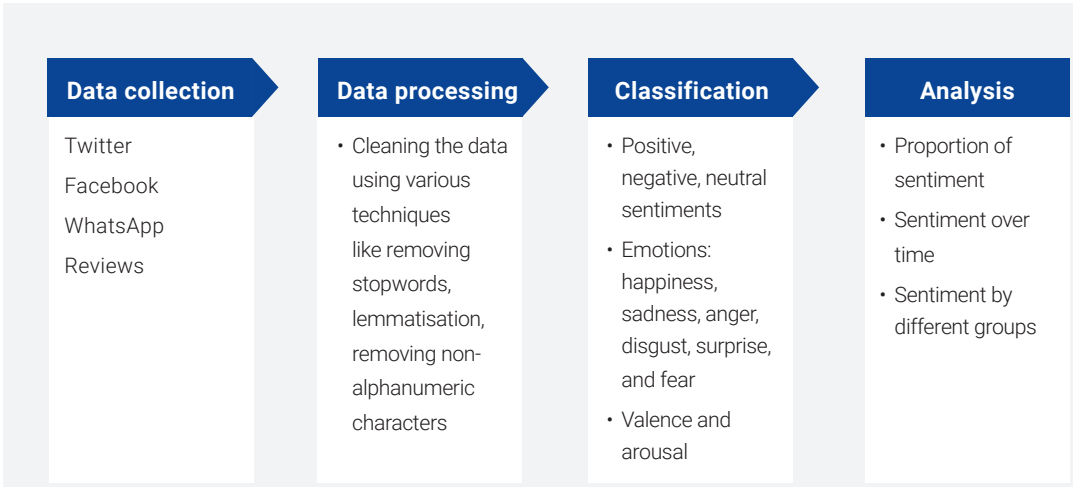

Figure 1. Process of collecting and analysing data for sentiment analysis

information. The researchers were able to predict the top two contenders in the four-corner fight (Choy et al., 2020).

c. Social listening on the General Elections in 2020 to capture conversations from Twitter, HardwareZone, and TR Emeritus in real-time to understand the sentiments of the commenters (Khoo et al., 2020).

The popularity of such methods is due to the increasing ease and accuracy of machine-driven techniques that can extract meaningful insights from people's opinions and feelings. For example, sentiment analysis can be a cost-effective tool for policymakers to swiftly understand the public's sentiments, making it an essential signal for public trust. In practice, the technique has been used to analyse tweets in India and associated positive sentiments with events such as the government's control of the COVID-19 virus and negative sentiments towards lockdown measures (Singh et al., 2021). In Singapore, the Agency for Science, Technology and Research (A*STAR) has looked at people's sentiments during the COVID-19 pandemic on Twitter across the world (Tan, 2020). There is practical value in monitoring the citizens' feelings, as they offer insights into concerns faced by the community.

A full discussion on the field of sentiment analysis is not the objective of this piece. In general, there are four key steps in the sentiment analysis of text data: data collection, processing, classification modules, and analysis of output (see Figure 1).

Analysis can also be even more granular and targeted using Aspect-Based Sentiment Analysis (ABSA). Consider the following food review: "I love the fried kang kong here, but the service is unpleasant." One can use ABSA to identify that the review is positive towards the food ("fried kang kong") and negative towards the service ("service"). Ever since the influential work by Hu and Liu (2004) in mining sentiment at an aspect level on customer reviews, there have been many studies involving the use of ABSA for analysing reviews (see Do et al., 2019).

Using sentiment analysis methods is not a silver bullet for understanding public trust. There will be a need to ensure consistent and non-biased standards for data classification techniques and be mindful of policies to ensure data security and user privacy. However, the insights derived from such machine learning techniques can support other data collection initiatives by the government, thereby increasing our understanding of public sentiments.

2. The Use of Participatory Action Research

Participatory Action Research (PAR) was developed to enable researchers to partner and empower communities towards social change

(Baum et al., 2006). The goal of PAR is to enable communities to take ownership in defining problems and initiating ground-up change from within the community (Ahari et al., 2012). PAR is grounded in a reflective process that helps researchers and participants appreciate and understand the issues within community contexts through an iterative process.

In community psychology studies, power differentials exist inherently in societies (Fisher et al., 2007). People's positions within the society mediate this power balance. Conventional research methods that are theory or data-driven often require experts with domain knowledge to create the research questions and methodology, thereby relegating the power to the researchers. However, researchers may be blind to the realities or challenges communities face due to the researchers' own biases. PAR differs from other research methodologies by advocating a bottom-up approach where meanings of social norms and ties between community members are better appreciated from a community perspective than researchers' objective perspective (Glassman, 2020). Communities are thus seen as partners with valuable information that can contribute meaningfully to knowledge building.

PAR believes in sharing the power and control over research between the researched and the researchers (Ahari et al., 2012). Researchers and communities are seen as equal contributors to knowledge building. In this relationship, researchers are positioned as facilitators and participants as co-learners in the research process; no one is considered an expert and therefore has "more say" in the research process. Both parties are also strongly encouraged to reflect on their biases in the research process (Ahari et al., 2012). The PAR process includes both parties from the planning stages of the research project, such as problem definition and the decision on data collection methods, to data interpretations such as observations and reflections from the data, and intervention development and re-evaluation of the problem when new data becomes available. Thus, PAR provides face validity (i.e. it appears at face value to measure what it claims to) in that it invites disempowered communities into a collaborative relationship with the researchers (or authority representatives conducting research). Trust can be built when communities see that representatives in power are working with the people versus for the people.

As a nation with strong governance, the Singapore community is accustomed to having the government deal with issues. PAR methodology can re-orientate community issues from "the government's problem" to "our problem", encouraging communities to own the problems, take initiatives and work with authorities to co-create solutions. Applying PAR for problem definition can empower the community to move from being "the objects" of a study to "subjects" who are responsible for taking actions and living with the consequences of the study (Kemmis, 2009). The decentralising of knowledge building also establishes an equal relationship between the researched and the researchers, emphasising contributions from both parties. When authorities engage with communities through listening to community experiences and allocating trusted roles to community members (Ahari et al., 2012), it communicates care and sincerity towards issues faced by communities, which can facilitate trust building between communities and authorities.

PAR of course, also has limitations: Ahari et al. (2012) have acknowledged that getting people to believe in and join the action research project often proves difficult. This has in some cases been eventually resolved through continual persuasion of key trusted members within the community, underscoring the importance of pre-project alliance, and the cultivation of community champions to work with the government.

3. The Use of Statistical Techniques

As previously discussed, low response rates prompt non-response biases, and this threatens the external validity of conclusions. There are several ways to reduce non-response bias, which starts as early as designing the survey itself. According to Bose (2001), this can encompass techniques to encourage participation upon refusal, offering incentives to increase participation, providing an array of data collection methods and flexible participation schedules, and training of surveyors (elaborated in the next section).

Alternatively, data collected of the sample can be compared to that of the population based on demographic variables such as gender and age: if there are similarities, then the data collected could be reflective of (that is, not very different from) non-responders based on these variables, given the ability of current results to produce findings similar to the overall population (Wåhlberg & Poom, 2015).

Non-response statistical bias analysis must be conducted when there is indeed a high non-response rate for a survey. The first step is to determine the extent of non-response in a survey. If the bias is small, its effect may not be problematic and can be corrected through weighting. This also applies if the bias is expected or known (Templeton et al., 1997).

Weighted estimates to correct bias can be created using base weights or non-response-adjusted weights. Base weights help evaluate bias before making non-response adjustments; on the other hand, non-response adjusted weights help compare "final" estimates with population values. Researchers need to distil characteristics or variables most relevant to non-responses to create non-response adjusted weights, and multivariate statistical analyses can be employed to facilitate identification. This process assumes that respondents and non-respondents have similar responses to survey items (Bose, 2001).

After implementing the non-response adjustment, the magnitude of differences in survey estimates can reflect the effectiveness of non-response adjustments (Bose, 2001). Any large differences may indicate that non-response bias is reduced. However, if no significant differences are detected, there might be no bias to begin with. Adjustments are not strictly necessary since respondents and non-respondents are likely to be homogenous.

4. The Use of Survey Designs Tailored Towards Increasing Response Rates

Getting quality public sentiments from the ground goes beyond the simple administration of the survey, requiring the researchers to design surveys that nudge respondents to participate in the survey. As most refusals occur in the survey's introduction (Houtkoop-Steenstra & van den Bergh, 2000; Jäckle et al., 2013), attention must be paid to improve the respondents' experience at this initial juncture.

Research has identified several factors that may have an impact on increasing response rates. For instance, Bennett et al. (2006) argue that different segments of the population have their preferred mode of being engaged, and researchers should understand these preferences and reach out to them accordingly. The younger generation prefers online surveys, whereas the older generation prefers face-to-face interviews (Dillman, 2002; Guinalíu & de Rada, 2020). Likewise, households in less economically advantaged areas and ethnic enclaves are less likely to respond to mail surveys than other households (National Research Council, 2013). Furthermore, the mode of data collection influences the response rates. Roghanizad and Bohns (2017) have observed that respondents are 34 times more likely to respond to a face-to-face request than an e-mail. Other studies (e.g., Montaquila et al., 2009; National Research Council, 2013) have reported that address-based sampling produces higher response rates and representativeness than telephone surveys. Thus, the appropriate utilisation of sampling methods may help the researcher achieve the required reliability and representativeness.

Studies have also found that respondents are more likely to participate in a survey if personalised salutations [e.g., 'Dear Mr Chen' versus 'Dear Sir'] are used during the initial interaction (Callegaro et al., 2009; Trespalacios & Perkins, 2016). Heerwegh et al. (2005), for example, reported an 8.6% increase in response rates when the online survey was explicitly directed at the respondents. Other cited factors that influence the respondents' decision to participate in a survey include the use of incentives (e.g., Shih & Fan, 2009); the number of contacts with participants (e.g., Klofstad et al., 2008); the effect of the researchers' social status (e.g., Porter & Whitcomb, 2005); the time taken to complete the survey (e.g., Kaplowitz et al., 2012); the saliency of survey topic (e.g., Groves et al., 2004); the way the introduction content is drafted (e.g., Nair et al., 2008); the role of the interviewer (e.g., Jäckle et al., 2013). By grounding the survey designs in the scientific findings, researchers can increase response rates and indirectly reduce the likelihood of introducing bias into the survey data.

Another equally essential point concerns the data collection partners that the government commissions to administer the surveys. Besides the need to represent the government agencies professionally, these data collection partners (e.g., market research companies, think tanks, and universities) must ensure that the surveys are administered correctly, responsibly, and ethically.

CONCLUSION

The ability to collect quality public sentiments not only plays a crucial role in alerting the government to emerging issues, but it is also the means to engage the masses and bridge the gap between them and the government. Recognising the challenges associated with data collection and its role in undermining the validity and reliability of the data constitutes an obligation to better policymaking (i.e., together with the populace) that cannot and should not be abrogated. Over time, this can build a more engaged citizenry and enhance the government's responsiveness to the population's needs, ultimately fostering more trust in the government.

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THE LEADERSHIP INTERVIEW

with **Shie Yong Lee**

Commissioner, Singapore Prison Service

The prison service is a security agency with a concurrent social mission, which is corrections, changing lives. Our officers join because of the Captains of Lives mission and our officers know that the two missions are in tandem: security and rehabilitation. We must execute the law and carry it out. We need to enforce order and discipline in the prison. Only with safety and security as foundation, can rehabilitation happen. Rehabilitation and the Yellow Ribbon cause is also not a lovey-dovey cause. The end outcome is the longer-term protection of society.

Whenever Commissioner Shie Yong Lee sees the word "assets" being used to refer to her officers, she immediately strikes it out. People are not assets, she says. They are "the heartware, the heartbeat of the organisation." It is why she prefers telling their stories, especially the stories of the last man on the ground, to showcase the impact they have on others around them, she tells Journal Editor **Susan Sim**.

Shie is the first woman to become Commissioner of Prisons in Singapore; indeed the first woman to head a Home Team Department (HTD). While conscious that she has broken a glass ceiling, she believes that with the Home Team, "it's always the case of who is the best man or woman for the job at that point in time." In the Leadership Interview with the *Journal* a year after taking over the helm of the Singapore Prison Service (SPS), she says: "I know it's apparent that because I'm the first female Commissioner, there may be some focus on whether being a woman, are you suitable to head a predominantly male uniformed organisation?" In terms of numbers, the SPS has more men than women, but no one has ever told her she could not rise to the very top, she says. "SPS has a very nurturing culture. And it's because we believe in the human potential, because we're in the business of changing lives. If we believe that the inmate can change for the better, … then certainly all the more we believe in the potential of our officers, that we can nurture them and help them reach their fullest potential." Canada and the United Kingdom have had female prison chiefs, she points out. "It's just a sign of times to come, that women officers who are found suitable for the job, will be able to take the helm of leadership."

Key Milestones

1995: Joined the Singapore Prison Service after graduating from the National University of Singapore

2004: Awarded the Japanese Government (Monbukagakusho) Scholarship under the Young Leaders' Program

2005: Graduated from the Japan National Graduate Institute for Policy Studies with a Masters in Public Policy and awarded the Dean's Award for Distinguished Academic Performance

2014: Completed International Executive Programme with INSEAD

2015: Appointed Deputy Commissioner of Prisons

2020 (28 September): Appointed Commissioner of Prisons

Previous key appointments included Head Operations of Changi Women's Prison, Head Research & Planning, Head Programme, Deputy Director (Civil Defence & Rehabilitation) in Ministry of Home Affairs HQ, and Commander Cluster of five prisons.

Her office in the Prison Headquarters is filled with mementos of her 26 years in the prison service, keepsakes made by staff and inmates to celebrate shared values and experiences. One item she has kept more than 20 years is a ceramic starfish made by an inmate in the prison's pottery workshop. It is the emblem of the Captains of Lives journey that Singapore prison officers embark on with their charges, to save and transform lives, even if one at a time.

But Captains of Lives are also prison officers, she reminds us; also sitting on her desk is a pile of blue files requiring her confirmation of punishments for inmates who have committed serious institutional offences such as injuring other inmates or staff.

Shie took over as Commissioner of Prisons in the midst of the COVID-19 pandemic. The drastic measures taken to ensure safety of staff and inmates, the lockdowns and movement restrictions, the sudden escalations or de-escalation of Safe Management Measures in line with community measures – these are all potentially volatile situations that in other countries have led to prison riots and violence. She is thus grateful, she says, to "the staff, the volunteers, the inmates, the families, because it goes to show the level of trust and support that have been built up over the years, so that when we need to make withdrawals like this, we are able to carry through with the difficult but necessary decisions and the changes on the ground." The long term sustainability of any of the COVID-19 restriction measures and the impact on the officers and inmates are issues that she and her officers have to constantly review.

Undoubtedly the tandem job of chief corrections officer who believes in second chances for offenders and chief warden who has to oversee judicial executions requires a steely focus on the end goal, which Shie defines as "the longer-term protection of society". You must have a strong sense of purpose and conviction, to the extent of loving the mission and the work more than yourself, she says. At the same time, she also believes that officers, male or female, should learn to prioritise their own families and health before their careers. "We always use this analogy about balancing, about juggling balls. Well, health and family are glass balls that cannot be dropped because once they're dropped, they're hard to repair. But career or work sometimes are rubber balls; if dropped, they can always bounce back."

Left unsaid is that only a few manage to do both. As a young graduate student in Japan, Shie showed she had the strength of conviction in herself when she won the Dean's Award for Academic Excellence while balancing the challenges of giving birth to her first child in a foreign land.

Following is an edited transcript[1] of the *Journal's* interview with Commissioner Shie:

TAKING OVER IN A PANDEMIC

You took over as Commissioner of Prisons in the middle of a pandemic. How has COVID-19 affected prisons?

Significantly, like for everyone else. In the beginning of the pandemic, when community cases were few, the prisoners were very safe inside prisons because they're self-contained. Transmission can only happen from contact with the community. This means it can come from new admissions, or when the inmates go out for court, hospital appointments etc. And then of course, it can be from the staff, and the community partners who come in and interact with the inmates, and our vendors and workshop supervisors. So right from the onset, when the pandemic hit us, we tried to look at all these risk points, and we layered in additional measures to detect the entry of the virus. With new admissions, we swab them when they come in, and one or two more times over 14 days, and separate them from the rest of the inmate population. We call that cohort segregation. And then we ringfence, because the staff still need to come to work every day.

If a staff is asymptomatic and brings in the virus, how can we stop the transmission from spreading too fast? We ringfence with fire-breakers. We restrict movements across housing units, then across institutions, across clusters. We have two Clusters here, Cluster A and Cluster B. And then within Cluster A, there are five institutions. There's a clear fire-break – we mandate that staff cannot mix across institutions. And within institutions, we have different levels, what we call different housing units. Between the housing units – you cannot mix. Which then puts in a lot of challenges, but we escalate and de-escalate. It's really tricky, a constant change of escalation and de-escalation of all our various security processes.

Detection, ringfencing, and then containment and control. When the number of COVID cases in the community was low, with the above measures, we were able to keep our prison environment relatively COVID-free.

You've had clusters.

In 2020 we had only six cases. All prisoners. And all the six cases were new admissions, but because of the processes we had in place, we were able to detect them and prevent the spread inside.

In 2021, we've had a lot more cases as the number of COVID cases in the community also increased and with the more transmissible Delta Variant. Particularly when Singapore progressed to Endemic Phase – Living with COVID – we've had clusters within prisons.

While inmates are in prisons and do not freely interact with members of the public, they may still be infected by asymptomatic staff, volunteers, and vendors who interact with them at the workshops, education, counselling, daily recreational yard, vocational training, etc. This is despite SPS having regular rostered routine testing of our officers and personnel entering prisons. Infected asymptomatic inmates may continue to infect other inmates and staff during the course of their work, recreation or programmes. Spread within prisons can occur very quickly because of our closed prison environment where inmates share cells and common areas for recreation, programmes and work.

The detection, ringfencing, containment and control measures remain necessary, not to eradicate completely, but to detect faster and slow down and control transmission.

Given the cases in the community, prisons will continue to have episodes of COVID-19 infections from time to time. Hence, from time to time, some inmate activities may be affected and temporarily suspended. Activities resume as soon as affected inmates have been isolated, contact tracing and testing operations completed. The safety of the inmates remains our priority. While programmes and activities in affected prison institutions may be temporarily suspended or scaled down, those in unaffected areas will generally carry on as planned, with the necessary Safe Management Measures in place. While there is risk, it is a balance of risks, for longer term sustainability and mental resilience of inmates. We have to ensure that inmates are still able to receive the necessary rehabilitation programmes while in custody, even in an evolving COVID-19 situation.

[1] *The interview was transcribed by Lim Jing Jing. This transcript has been edited for length and clarity.*

All these additional COVID measures, security measures, have certainly created a lot more complexity in the work of our officers, and for the inmates as well. So we have to watch the inmates' tension as well. In overseas prisons, we've seen that because of COVID, they had to do lockdowns, and as a result, there were riots and massive outbreaks.

Thankfully, in our prisons, the inmates have been generally cooperative even during lockdowns. They understand the need for all these enhanced measures, which hasn't been easy for them. For example, when we stop counselling services temporarily, volunteers have been happy to give us videos, to pivot to other forms to reach out to the inmates. Some of the counselling sessions have been held virtually, but it's never at the same intensity, the same impact as in-person interactions. We also have had to stop family visits and replace them with phone calls or more letters.

Fortunately, this year we introduced digital tablets for inmates to communicate with their families through e-letters. Previously, it used to be hardcopy letters, snail mail. But now with e-letters, the families find it very convenient to communicate with the inmates, in unlimited numbers. But of course, we control the number of letters that the inmates send out to make sure that the capacity of the system, a dedicated network, can take the load.

I'm thankful to the staff, the volunteers, the inmates, the families, because it goes to show the level of trust and support that have been built up over the years, so that when we need to make withdrawals like this, we are able to push through with the difficult but necessary decisions and the changes on the ground.

Do inmates earn the right to have access to the digital tablets?

No, under the Digitalisation of Inmate Rehabilitation & Corrections Tool (DIRECT) project, we are using tablets as a game-changer in the way inmates transact their activities. They can use the tablet to communicate with their family, check their earnings, check their scheduled visit dates. We've put in e-programmes, and during this COVID period, we've also put in e-news. We still have the physical newspapers, but when we restrict movement for the inmates, it is hard for the inmates to come out to read the newspapers. So we pump in news so that they know what's happening in the community. I think the anxiety comes when they do not know what's happening in the community, what's happening to their family, and they're trying to make sense of why we are taking all these measures inside. But if they know what's happening in the community, they have a means to connect with their family, then we can manage their stress level.

I also want to emphasise the importance of the trust that's been built up. In times like this when we have to take quite drastic measures, to lockdown and to restrict movements, we have seen the importance of trust bearing out on the ground.

When did this use of tablets start?

We have been using tablets for the last three years but progressively. We started off as trials, pilots, small groups, as e-letters at first, and then we put in more functions: e-programmes, e-reporting, checking of wages, visits.

So COVID accelerated digitalisation?

Yes, I think as in the whole of Singapore and the world, COVID, with the risks that it brought, accelerated the use of technology. We now have Zoom courts, which the courts pushed for because they wanted due process of the law to proceed without the risks of people moving around. And we've also started tele-medicine in a limited way.

I also want to emphasise the importance of the trust that's been built up. In times like this when we have to take quite drastic measures, to lockdown and to restrict movements, we have seen the importance of trust bearing out on the ground.

There was this particular incident that my staff shared with me. During one of the lockdowns,

whereby we restricted the inmates' movement, but we allowed them to communicate with their families through phone calls, a particular inmate was lamenting to his family member about how he couldn't have yard time because he's quarantined and he's been swabbed a couple of times. The family member actually counselled the inmate, told him the prison authorities are doing what they can to make sure he's safe, everyone else is safe – in gist, just be brave and don't complain. We are really quite thankful that the family can see that what we're doing is in the best interest of the inmate population, that we're trying to ensure their safety.

What are the key objectives for you when you have to make such leadership decisions?

Safety is an important factor. Our environment is highly dense, so we have to calibrate our actions to be a notch more cautious. The other part of it is whether our staff can implement decisions on the ground. Because with certain measures you can be 100 percent safe, but in the end, tension breaks out, and the staff cannot enforce the measures on the ground. We have to be practical and that's where the views of the commanders are very important.

Every week, my Leadership Group and I discuss COVID. That's where we get a good sense of what's happening on the ground, because the community measures also keep on changing. Each time there's a change, we have to translate that to how it impacts our ground because prison, while being an enclosed environment, cannot be operating in a silo. Let's say the government is opening up, the government is pushing towards treating COVID as endemic – the prison authority can't say no, no, we will still be in that very high, tense position. It will not gel with the government's narrative. Family members, volunteers, will expect to see some de-escalation of measures.

Since we are one notch higher when it comes to enhancement of measures, we try to be one notch slower when it comes to relaxation of measures. It's a calibration of risk because we cannot have zero risk. If there's zero risk, the operation just cannot carry on with the kind of manpower that we have on the ground. The last man on the ground is the one that will carry out the instructions and we will not compromise his or her safety.

THE FIRST WOMAN HOD

You're the very first woman to be appointed head of a Home Team Department. Did you think that was a possibility when you first joined the prison service, especially since you topped your cohort in basic training?

In all honesty, no. I think when you join as a young officer… I never imagined it. It's too far ahead. I didn't even know if I would stay on in the job beyond the two-year bond. So, I just wanted to enjoy the work.

I think you know I'm not a scholar. I would say the thought of being Commissioner was not even a thought when I joined the service. I just focused on knowing more about the work of a prison officer. At that time, the Captains of Lives motto hadn't been coined yet. But I became a prison officer because I felt that the work would be meaningful. To uplift a certain segment of the population which could be seen as the lowest stratum of society – that was something that I thought would be meaningful.

You were awarded a Japanese scholarship for graduate studies.

Yes, that was part of the career development, thanks to the Ministry of Home Affairs [MHA], for young officers. I went to Japan, to their equivalent of our Lee Kuan Yew School of Public Policy. They call it the GRIPS – National Graduate Institute for Policy Studies.

I also gave birth to my first child in Japan. I have three kids.

You are married to a former police officer.

Yes.

You met on the job?

Yes. We met in a Home Team project that was called Home Team Approach to Rehabilitation. You know in the early days, they would pull Home Team officers together, and give them a project, with a sponsor. The sponsor for the project that my husband and I were in was Mr Chua Chin Kiat, then Director of Prisons. He offered this topic on prison rehabilitation, and selected me to be the

rep from prisons. There were a few police officers, CNB officers. I met my husband there. He wasn't very convinced about the purpose of rehabilitation when we joined the group but I'm glad to say that at the end of the project, he was converted.

And your first child?

I had my first baby in Japan. It was unexpected. I think during the orientation, I realised I was pregnant. It was quite a stressful situation for me because I was away from family, it was my first time overseas studying and for such a long period. First pregnancy. I didn't know what to do. I did contemplate whether to quit the studies and come back, or defer. And then I thought about the impact – it would have been quite irresponsible to do so. But how will I be able to cope? Thankfully, my husband said we can try this out, and if really there are complications in the pregnancy, then you come back.

He was also quite busy with work then. I made use of term breaks to fly back to visit the family and to have some of my check-ups done by the local gynae. He flew over two weeks before I delivered, and stayed two weeks after I delivered. It was in the middle of the term. So my daughter spent two months in Japan before we all came back together because it was already towards the tail end of my course.

And after you delivered, you continued going to classes, taking exams …

(Laughs.) Actually, what I did was I pushed most of the electives upfront, so towards the end, I only had some core project work. I planned it such that I finished most of the course work early, then after delivery of my child, my schedule was a bit lighter.

My parents also flew over to look after my daughter while I went back to school for some of the classes. Yah, that was after delivery. This doesn't show that I have very good family planning. (Laughs.)

But it shows very good time management. When did you realise then that you could become Commissioner of Prisons?

When did I realise? (Pause.) Maybe in the last two to three years?

When you were named deputy commissioner.

Yes, I guess so. Even then, you know, there's also the possibility of someone else coming in to take over as Commissioner, someone outside of prisons, which has been the case in the past. It's always the case of who is the best man or woman for the job at that point in time. There's never that certainty you will get the job. That only comes when you're told, which can be less than a year from the job, when certain decisions are more firm.

When were you told?

I think about slightly less than a year before the actual D-Day.

How did you feel?

(Pause.) You would feel that tremendous responsibility, uncertainty as to whether you would be able to do the job as well as you could for the future of the department. But basically, at that point in time, I tried not to overthink it. If the decision has been made, I will do my best and trust in my team that is supporting me. For the particular season where I am placed, I shall just do my best, be fruitful and steward well. When my time is up, pass on the baton to the next Captain of Lives.

Did the issue of your gender ever arise? You are the first female HOD [Head of Department], the first female Commissioner of Prisons.

No one has ever told me that it's an issue. But I know it's apparent that because I'm the first female Commissioner, then there may be some focus on whether being a woman, are you suitable to head a predominantly male uniformed organisation? I do recognise that there may be thoughts about these issues but the fact that after all these considerations, MHA decided to appoint me as the Commissioner, then I will just do my level best.

And when you first joined the service, nobody said you can't do this because you're a woman?

No. I would say that no prison officer has ever told me this. SPS has a very nurturing culture. And it's because we believe in the human potential,

because we're in the business of changing lives. If we believe that the inmate can change for the better, maybe not this time round, then the next time round, then certainly all the more we believe in the potential of our officers, that we can nurture them and help them reach their fullest potential.

If you look around, the Correctional Service of Canada is also headed by a woman Commissioner, Anne Kelly. And I think at one point in time, the UK prisons as well. I think it's just a sign of times to come, that women officers who are found suitable for the job, will be able to take the helm of leadership.

You referred to the prison service as male-dominated. I think the general public still sees the police, prison, emergency services, most of the Home Team uniformed services, as masculine careers. What would you say to those who think this way?

Statistics-wise, it is true. We can't say that it's not male-dominated. We do have more male officers than female officers in prisons, and I think in most of the HTDs, the uniformed HTDs. And I think it's because of the nature of the job. Even in prisons, we only have like 10 percent women inmates; 90 percent are male inmates. So naturally, we would need more male officers because there are duties like strip search, frisk search etc, which would be better carried out by the same gender. A male officer will have the physical strength when there is a need for use of force. It's safer for male officers to restrain male inmates. I think it is the same for the police, if you look at their arrest figures. There are more male than female offenders.

I think it's not something where we should say, "Oh it's because women are not given equal opportunity, that's why it's like that." It's a function of the nature of the job, and the requirements of the job. And whether certain requirements of the job appeal more to male officers than to female officers.

But over the years, policies have also changed. In the past, when I first joined the service, women officers could not look after male inmates, only after female inmates. Then, of course deployment was restricted. Now, we allow women officers to manage male inmates but we manage the proportions for the reason that I mentioned. And for certain categories whereby the prisoners are more dangerous, we deploy our women officers such that they're never alone with a male prisoner.

When we look at staff functions in HQ, there are more women officers. Our correctional rehabilitation specialists, who are like counsellors and psychologists, are predominantly women. I think certain types of work appeal more to a certain gender and that's okay. But the key thing is there's nothing systemic that makes it difficult for women to serve. It's a matter of whether we get the right profile, and the right women officers who want to do the job, and we have a supportive environment.

What message then do you think your appointment as Commissioner sends?

It's really just the right person for the job. Man or woman.

You had been the commander of a prison cluster as well.

Yes. Correct. That was part of my career development, one of my key milestones. My bosses felt it was critical, and I think it's also critical, that I command a cluster. And that was one of the longest stints I had. I was Commander, Cluster B, for almost five years. I really did appreciate the long stint because you need at least four years to know the officers on the ground. The key responsibility of a commander is their ground presence, knowing the officers. And in a cluster, typically you've got 600 officers. To

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actually know the officers, and within your own team, build team camaraderie, trust, so that you can actually see through some of the changes that you want – that needs time.

You see this thing [pointing to a ceramic beehive] behind me? That was given to me by my staff at Cluster B when I left. They used to call me the queen bee, so feminist. Then when the next commander was a male, they changed the chat group name from queen bee to the king's men. I

think we've got to be comfortable with the gender differences. Sometimes it can be quite fun too. It makes the work environment more interesting.

Did you feel that you were being held to a higher standard and you had to do even better than a man would have, as commander of a cluster?

No, I didn't feel that way. I always feel that my staff or my bosses, their expectations of me, are what they expect of a commander, male or female. Now, as Commissioner, I don't think my officers expect more of me because I'm a woman; they just expect me to be a good Commissioner, man or woman. There are already high standards expected of a Commissioner, so I don't think it's realistic to layer on additional expectations just because you're a woman.

Would you say then that in the Home Team, gender doesn't come into it at all? That if you're very good at what you do, you will get the job?

In the prison service, it has been shown to be so. (Laughs.) I think in MHA, the culture is one that's very enlightened, and they really choose the right person for the job, regardless of gender.

Earlier in my career, I did think that I had to be a bit tougher. When I first went into a commander position, I was very conscious that I'm a female commander in a male cluster. All the inmates are male, the majority of the staff are male. But I try not to overthink the gender issue because sometimes I think women officers are hardest on themselves. (Laughs.) We impose a lot of self-expectations of what people expect of us. I don't think that my SPS colleagues expect more out of me just because I'm a woman. But it's self-imposed, so I try to appear tougher. I am also quite conscious that if I have to scold or, correct an officer, to do it with tact, to do it firmly and not to injure the feelings of others. That I would do for male or female officers. But I guess I am more conscious that for males, to be given a dressing down in public by a woman may not go down very well. We've just got to be a bit more conscious about how we treat our staff and our colleagues. The tongue – the smallest instrument – can cause a lot of hurt. Mere words can destroy and crush a person if you're not careful about it.

Everything one reads about women executives in the private sector suggests that women are held to different standards because an assertive woman gets dismissed as hysterical, for example, whereas a man is generally given the benefit of the doubt. And I think a lot of women in the uniformed services dress and behave like men because they think that's important to make sure their gender doesn't come into the picture. They have to be like the men.

That would be unfortunate. The SPS leadership group is about 30 percent women. Of my directors, 40 percent are women. But overall the prison service is only about 30 percent women. So maybe it's unique to prisons, but my female directorate members are quite comfortable being themselves. I think it's important that we are first comfortable with being ourselves. And all of us have to be conscious that there are certain triggers. To be frank, I also have triggers. Certain words cause me to jump to the ladder of inference. And then I may say certain cutting words, but that's not attributable to the fact that I'm a woman. All of us have certain biases. That's

where I think trust in the team is important. And that takes time to build up, the relationships. If I have an outburst, or I'm angry over certain things, they don't say it's because I'm a woman. I'm just angry.

I do see that some of the female officers in the HTDs wear pants more often than they wear skirts. There are practical reasons. And they don't wear makeup because it is too warm inside. When we work in prisons, we tell our officers not to wear earrings in case you lose one, and it becomes a contraband, something sharp. And you don't wear rings because if you do have to use force, you could hurt the inmate. In uniform, we can't do our hair in a certain colour. These are requirements of the uniform. But I think a lot of the women officers dress very femininely outside work.

The under-representation of women leaders, maybe not just in the Home Team but also in some other sectors as well, I think it's possibly because women have, for the longest time, had to juggle many different roles and we make those difficult choices to focus on certain other priorities. Like the family. When your children are young, after discussion with your husband, sometimes the mother stops work. That naturally has an impact on a woman's career development and advancement, if you take a long break from work or if you need to work part-time to look after elderly parents. I see this happening, that there are more women taking no-pay leave than men. It's partly because women have strong maternal instincts. Focus on the family is important. When women focus on the family, then maybe their husbands can be more focused on their work. Every family needs to make its own decision. When I look at my secondary school friends – I have a clique of six of us who are quite close – many of them had careers like doctors, lawyers. At a certain point in time, they made the tough choice to stop work and attend to their family and their children. I think it's admirable too, that they made a deliberate choice to set aside their careers for the family.

We are in the middle of a big national conversation now about gender equality that suggests that women are not getting their fair shake. Do you think that the Home Team is a bit unusual because it is also self-selecting, it attracts a certain set of women and, by definition, these are women with strong leadership instincts and skills to begin with?

That's probably true. And they have to be resilient because when they first join, they know they are entering a uniformed service, and they know that it's male-dominated but they still have that very strong conviction that they want to do the work.

So, a strong sense of purpose to whichever uniformed organisation they join. In prisons, we see that the women officers who join us, they know what they're signing up for, and they still want to do the job. And they want to do it well. So there's that strong sense of conviction. I can see it in the women officers. The men too. It is a very deliberate decision to join a uniformed service – it must mean that the mission and the purpose are really very compelling. And I think that is very central. When that is very central to you, then very naturally, your attention and your focus are there, and you'll do well.

Do you think that your career path prepared you for this job? Does the public service do a very good job of grooming its leaders?

I should say so. Postings and exposure to other work have been very helpful for me and I think there's this 70-20-10 theory on learning. The theory is that 70 percent of the learning is from action – that means acquired from your challenging experiences, your assignments, that means on the job. And 20 percent is acquired from interactions with others, developmental relationships, coaching, learning from others, and peer learning. The last 10 percent is acquired in the classroom when you attend courses. I think in the civil service, and also in the Home Team, postings are a critical part of career development. We call it the route of advancement – foundational posting is two years, and for uniformed officers, it must be a ground posting, then after that you go for a staff posting, then maybe a ground command posting, after which a policy posting, then maybe to MHA, to look at things from a higher strategic, cross-cutting perspective of policy-making, and some officers even get seconded outside of MHA.

The Home Team also has courses that cut across departments because we realise that to avoid Home Team officers being very siloed in their thinking, we

need to bring people together so they see issues across the HTDs, build relationships, build trust, and then eventually, as the officers grow up to be leaders, there is that familiarity, and there is this ease of communications. Because if you trust someone, then you can communicate a bit more freely, you second-guess less. When the quality of the conversations is better, then the quality of your decisions is also better.

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People talk about an "old boys' network". Is there an "old girls' network"? Do the women leaders network among themselves to share ideas, share experiences?

An old girls' network? Not that I know of. But personally I find it easier to talk to ladies as you can share a lot more personal stories and there's less risk of any misunderstanding. It's just a comfort level. I came from an all girls' school; 10 years in an all girls' school.

Do you see the women helping each other?

I certainly think that as leaders, we must mentor. But I don't think we just need to be a bit more focused on mentoring women. Women may feel more comfortable coaching women because coaching does require us to build quite a lot of trust. Sometimes the coaching doesn't just fall within the work-end bit. It's also coaching in your personal life issues, so that aspect I think is what the women officers would be more comfortable with. When we match our directorate coaches to young officers, we don't do it on a gender basis. We look at it as more in terms of which division you belong to, and we find you a mentor from a different division, so you have a different perspective.

But coaching is a relationship issue. If it doesn't gel, then maybe that's where you'll have to find another coach.

On personal life issues, is it your impression that most of the women leaders in the Home Team aren't married or have families? And those who are happily married, are married to other Home Team officers?

In prisons, my directorate group is 40 percent women, and I think we're about half married, half not married. I've never really counted.

Among the Home Team leaders, some are not married maybe because they work so hard. I don't know. They may just be at certain phases of their lives where they've made the difficult decisions, the sacrifices to focus on their work.

When I first joined the prison service, I worked quite long hours. Then Mr Chua Chin Kiat, who became the Director of Prisons, whenever he passed by my office, he would open the door, and tell me, "Eh, you go back lah, or you can't get married." Of course, I said, yes sir. He was very happy when he found out that my husband and I came to know each other through his project. He said that's one of his rewards.

OFFICERS ARE NOT ASSETS; THEY'RE HEARTWARE

When you look at the future leaders for the prison service, what are the leadership qualities you look for?

First and foremost for me, the leader must have this strong sense of purpose and mission in the work, to the extent that they must love the mission and the work more than they love themselves. Because when you love the job more, then you also love the people, and you take care of the people, and look after them with an enabling mindset.

We are in a nurturing business, we believe in inmates' potential to change, and likewise we must believe and enable officers. I don't see the officers as an asset. Whenever my officers give me any script that uses the word "asset", I

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cancel it out. Don't refer to officers like some physical assets, because the people are actually the heartware, the heartbeat of the organisation. You have your software, you have your hardware, but the heartware is what makes the organisation.

I also believe in leaders that have an abundance mindset, who see abundant opportunity instead of the lack, who see it's half cup full, not half cup empty.

We will never have sufficient resources to do what we all wish to do. There is also manpower productivity tax every year. Hence what we lack, we need to look for other ways to bring in the people; our partners. We actually have more volunteers

than staff. And this has been built up over the years. The lack sometimes forces us to see things from an opportunity perspective, then let's try to find the

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resources, let's look at other ways of doing things. It's important in this era, especially when resources are very tight and constrained, that you see abundance and not the lack, because then you also tend not to turf guard so much and will share resources.

We're also trying to do more to find leaders who are mavericks. Since we're quite a tight team, and we're quite nurturing, the tendency is for us to end up looking for our own kind. But sometimes you need to have diversity in the team. Not too many, but just a few, so that they can challenge the majority team mindset and we are not too comfortable and uniform.

So, in gist, we want leaders who can build, encourage, and create capacity, collaboration, and creativity.

Former Prisons Director Soh Wai Wah once told me this analogy of a starfish marooned on the beach, about picking it up and throwing it back into the sea because you make a difference by saving people one at a time.

This starfish analogy is from the year 2000 when we did our visioning exercise under Mr Chua. [Picks up a ceramic starfish on her desk]. The inmates made some of these in the pottery workshop to be given to key officers, to remind us. I've kept mine for 20 years.

Yes, you save one at a time and then as you save one at a time – we've gone ahead and sort of extended that analogy – other people seeing you save one at a time, join in and it becomes a wave.

This has been a powerful analogy not only for the staff but for the inmates too. In a lot of the change management work, imageries are very powerful. The imagery of the starfish has helped prison officers see their role as captains of lives.

Management guru Howard Gardner says that a leader must have a central story or message that he tells to inspire people so that he can be effective. What is your personal story?

I've thought hard about this. Then I thought to myself, when I try to inspire my officers, I don't tell them my personal story. I tell them their stories. I tell them about what I've seen them do, down to the last man on the ground.

I share stories about the impact of their work. Let me share one story. We have graduation ceremonies for our inmates when they meet certain milestones. When I was Commander B, I was present on a Saturday morning for the graduation ceremony for a particular group of inmates. For the graduations, we invite family members, but there was this particular inmate who didn't have his family members because they had given up on him. But one of the officers came. This officer was no longer looking after the inmate, who had been transferred on a routine rotation. But the officer made it a point to come and it was after his night duty. Can you imagine, you clock off at 7.30am, then you have a graduation ceremony at 9 o'clock? The officer stayed after his shift, sat there and watched the inmate's graduation ceremony because he wanted to give the inmate affirmation, to say I'm glad that you decided to want to change, to go through the programme, and now you're graduating. That though your family has given up on you, there's still hope.

The mantra of "bloom where you're planted" is very important to me. Sometimes we cannot choose our postings and where we actually land up, but wherever we are placed, let's be fruitful and steward well.

I thought that gesture by the officer was inspiring. So these are the stories I normally share because I think it's more important to spotlight the staff, and the impact of their work because sometimes they may feel their work is not visible.

BLOOM WHERE YOU'RE PLANTED

What keeps you going?

I know it sounds cliched, but I really love the work I do.

The mantra of "bloom where you're planted" is very important to me. Sometimes we cannot choose our postings and where we actually land up, but wherever we are placed, let's be fruitful and steward well. I joined the prison service because I believed in the mission. And over the years I've seen the prison service develop and transform. The mission is still as strong and compelling. In fact, it has taken more dimensions that drive me and my leadership team to go on. So that's my central story.

Were there potential breaking points for you that you powered through?

I would say that the potential breaking points did not come from just work stressors. They came from balancing work demands and personal demands on the family front at the same time. So those are the times where you have to make a decision and I'm thankful I had colleagues, bosses, who were there to listen and they gave me the support I needed to help me ride through some of these challenging times.

I think all staff go through it. When you have children, when you have ageing parents, then the demands at different phases of your life increase. We always use this analogy about balancing, about juggling balls. Well, some are glass balls, some are rubber balls. Health and family are glass balls that cannot be dropped because once they're dropped, they're hard to

repair. But career or work sometimes are rubber balls; if dropped, they can always bounce back. You can pick them up again. Certainly no leader wants to "drop the ball" and importantly, for me, the struggle is wanting to be there for and with the team during a critical time and also wanting to be there for my family. In the course of my career, there have been times where I needed to be more focused on the family, or some family crisis or issues. My bosses, my peers, have always been very supportive, stepping in to help and given me that time and the space for my family.

Do you think women have a greater struggle when it comes to balancing work-life?

I think so. I see more of my women officers taking no-pay leave to tend to their ageing parents, though there are a few brave men who do so too. I had one male officer who has five kids who said, "I'm going to focus more on the kids, to help out with the family." I said, "Well done!"

It's the roles we play and the priorities and maybe in the context of our family, what are our goals.

Does it then make you feel that women in general are better leaders, more empathetic leaders, because you struggle with that balancing act a bit more intensely than men do?

All my bosses have been males and they were very empathetic. It depends on the individual. I had one boss who told me that he considered me for a post but felt that if he put me there at that time, it would not be good for my family life. It would crush me. I appreciated him for doing so. My youngest son was then still very young. He's 11 years old now. But at that time my boss felt that putting me in that job would mean I'd have less time with my son. I was then always saying I wished I had more time to see my girls when they were growing up and I missed that opportunity.

When my babies were young, I used to tell the Commissioner that I didn't want to travel. So they've always spared me from the overseas trips, up to a certain point in time when they said, no, you just have to go.

Those are choices that we make as women leaders. All leaders have to make choices, and not regret them.

On the question of leadership, what to you is more important – to be an effective leader, or to be a moral leader?

I don't see it as either or. But if I must choose, then I would say it would be more important to be a moral leader. Values are important, as you can't have effective leadership without morals because then you're not authentic. Your men would not want to follow a leader who doesn't have a core set of values that they're drawn to, that they can identify with. So effective leadership means the leader must have certain values or principles that are worth modelling after. Real leadership is the act of mobilising people to confront the challenges of the day for greater good because they want to improve mankind. In order to do that, leadership itself is not just telling people what to do, it also involves changing people's mindsets, their values, their habits.

You've spoken about bosses who've been empathetic and whom you've learnt from. Who's the leader you most admire?

By identifying one, I risk not giving due justice to the other bosses I worked for but if I were to choose, I would say Mr Chua Chin Kiat, the police officer who made us Captains of Lives when he was Director of Prisons. I think the prison service has a lot to thank him for because he kickstarted this whole transformation of the service, and the work we do, and setting us on the path to being a correctional service.

Perhaps I should qualify that I was a young officer then, and in that intense learning mode. Thereafter the leaders I've worked under, although they're good, I think never quite left the same kind of deep impression. As a young officer I worked with Mr Chua during the visioning days, where I could see how he was the impetus for certain changes by rallying the people. He was visionary, his clarity of thought and purpose – he showed me how to strategise to implement our strategy, pull in the right people, influence people outside of prisons to support the cause. It was a huge opportunity for me to have been able to work with him.

What are the leadership skills you remember picking up from him?

He was very clear in what he wanted. The clarity of thought and purpose was very clear. And he always knew what he was not good at, which were the details. He used to say, the devil is in the details, I'm not going into the details, you all go and scrub it out. Then after that, come back to him again. And he didn't sweat the small things. He used to tell us that the job of a leader is to try to make something small become nothing, and something big become small. You don't just upward delegate everything. Basically, he was trying to teach us – don't raise up everything to me, you should be empowered to solve the problems. Only bring up the issues that you're unable to resolve. A sense of empowerment – that's what he gave to those who worked under him.

The job of a leader is to try to make something small become nothing, and something big become small. You don't just upward delegate everything. You should be empowered to solve the problems.

What about crisis leadership? Are there three lessons on crisis leadership that you can share from personal experience?

One of the lessons is that in a crisis, you often need to make a decision very quickly. The staff need a decision. The house is on fire, or your house is close to being on fire. You do need to make a decision quickly and in such a situation, you need to fight that urge to have very comprehensive information before you make the decision. My personality is such that I like comprehensive information. That's something that I really need to check myself on. Take the pandemic issues, especially when we have active clusters going on. Sometimes the decisions that need to be made require more information, and sometimes, you just have to take the risk. Just gather whatever information you have and do it because the staff need that clear direction.

And the importance of communication across parties. Every week, we have one meeting on COVID. Whenever we have an active cluster, like in May, we have COVID meetings every day at 2pm. Everyone comes together. Some of the staff asked: I've got so much stuff to do already, I can't even execute what is decided after one meeting, why is there a need for such regular meetings? I think that regularity is important because it brings everyone together to update each other. Everyone is kept informed so they at least know what each other is doing, and how that may impact their area of work. Because in a crisis, if I'm just doing something, sometimes I don't think about what impact it has on others. In my meetings, those who are not in the action mode – their job is to think about how it would impact other aspects of the work, so that as a team, we can cover for each other. Communication across parties is very important in a crisis as it also helps to relieve anxiety when staff know what's happening. That's true also for the inmates and their families.

What will also resonate with a lot of uniformed officers is command presence during a crisis. You can't command from HQ. You have to go down to the ground. During this COVID situation, even when active clusters are ongoing, you have to be on the ground. You know you may not be able to do much and in fact, the staff may be taking up time just to host you. But I think it's important that the staff see that we're in this together, we're concerned about their wellbeing, and there's also an opportunity for them to have direct access to you, and for you to have a sense of what is the pulse on the ground. Are the staff very fearful? Are the staff very anxious? The staff may say, "Ma'am, we can do it. We're good. Take care of yourself." No, I want you to take care of yourself. I don't want you to take care of me.

WE HAVE TO BE MORE OPEN AND DEMYSTIFY PRISONS

The Singapore Prison Service is 75 years old this year. A lot has happened in the last 20 years. The recidivism rate is among the lowest in the world.

What else can the prison service do to transform corrections?

I think the past achievements would not have been possible if not for the contributions and the sacrifices made by the pioneers and my predecessors, and especially the community partners over the last 20 years. But the work is not done, there's a lot more that we can do. Our two-year recidivism rate is at all-time low, but it has also plateaued for the last 10 years or so. At around 20-odd percent. Sometimes it's 23, sometimes it's 24, this year it's 22.

But our five-year recidivism rate is 40 percent.

These are mainly for drug offences?

You're right, it's mainly drugs because 80 percent of our inmate population are in for drugs and drug-related offences.

But if you compare our five-year recidivism rate to some other countries, we are doing well as their two-year recidivism rate is already 40 percent, or in the high 30s. We have favourable results despite a leaner staff strength. But going forward, I think we can bring down the recidivism rate further. And that's surely something that we must do.

How would you do that?

We've started doing this already, with the focus on the community – what happens after the offender is released from prison. For the five-year recidivism rate to drop, the two-year recidivism rate must also drop. The two-year to five-year rate must also drop. It means the hand-holding of released inmates, the scaffolding needs to be tighter. The rehabilitation programmes available inside prisons will continue and we've built this up over the years. It's what we then do outside prisons that will have that major shift.

Previously, we used to intervene on an individual offender level, but in order for change to be sustained in the community, you don't just intervene with the individual, you must do it at a systemic level, at an ecosystem level. And that does mean more resources, but prisons being resource-constrained, it does mean working more and more with the community partners. As we bring in more community partners, we've started equipping them, planning certain kind of courses to equip them to work with us, sharing more information with them. So when inmates leave prison, we supervise them for a while, then we pass the baton to the community partners, and they can carry on with them.

In the past, people didn't tend to talk about their incarceration experience. But now on social media, there are always people who comment about their experience in prison, and try to compare our standards with those of other first world nations. But our philosophy is that incarceration should still continue to be a deterrent. And so that's how our policies, our regimes are set. We still believe in capital punishment, corporal punishment, for the purpose of retribution and deterrence.

Increasingly over the years, I do think how prison does its work, how and what happens inside prisons – we will have to be more open and transparent, and we should do this proactively, so that we have the opportunity to dominate the narrative of why we do things our way.

What are the sort of wicked problems that the prison service faces?

Wicked problems, or problems that are very, very hard to solve, are those that relate to changing people, to changing lives, to corrections, to preventing offending, and preventing reoffending. Because they require not just individuals, but the ecosystem, and many, many different parties to come into play.

Specifically, I want to talk about intergenerational crime. Let me share with you a very short story that impacted me when I first read it. It convinced me that intergenerational crime is something that we need to be focused on.

The story goes that this group of villagers was at the riverbank when they saw a baby floating in a basket downstream. One villager went into the river and saved it. Then he saw another baby coming down the river. And he saved it. Then, as he saw more and more babies in baskets flowing downstream, he got the other villagers to form up a line to save the babies. Suddenly, one of his team members broke away and ran upstream. He shouted at the team member and said, "Hey, what do you think you're doing? The work is not done here!"

And the team member said, "You save the babies. I'll go upstream to see who is throwing the babies into the river."

So prisons are at the end of the chain, right? In that sense, we have no choice about who comes in. The drug addicts, the young prisoners, the new offenders. We do what we can to prevent reoffending. But we also know that there are challenges because inside prison, they may be good prisoners. But they may not be good citizens outside. They may not be able to hold a job. They may still have family issues. They may still have criminal mindsets. That's what we're trying to change. But how can we then prevent offending, especially with the younger generation coming in? And that is a whole-of-government problem. It's not just talking about preventive education. When we look at the prisoners in our system, you really have to move upstream to solve quite a lot of the issues that are upstream.

Starting with youth crime?

With youth crime, or maybe even look at dropouts, youths not being engaged. Many of them come from families that may not be intact. So it's about family issues.

Even now, when we look at our inmates, we've started to try to help their children. But there are more children than we can help, so we work with MSF [Ministry of Social and Family Development] to ID them. We've done some research that shows that children of offenders are at a higher risk of getting into trouble. It's not because of genetics, don't get me wrong. We don't mean to stigmatise the children, but there's a lack of opportunity. Imagine if their parents are missing, their grandparents are elderly. And negative peer influence comes in. These are issues that we may not be able to solve completely, but we have to get at it, we have to work with the various parties – the Ministry [of Home Affairs] and the other ministries as well.

What are the hard choices you've had to make?

Hard choices typically have to do with people. In our case, it's not just the staff but also the inmates. Some of the particularly hard choices have to do with young inmates – when to punish, when not to punish.

You have the power to order corporal punishment, don't you?

As Commissioner of Prisons, I have the responsibility to confirm the punishment for major prison disciplinary offences, which can include corporal punishment. All these files you see [pointing to a pile on her desk] are the Investigation and Adjudication Reports. We look at each case very carefully. When an offence is committed, there needs to be swift punishment to maintain order and discipline in our prison. There is investigation into the circumstances leading to the incident, looking at the culpability, evidence, aggravating and mitigation factors, etc. After due investigation, there is an adjudication by an independent Senior Superintendent and the punishment is also reviewed by an independent board appointed by Minister for Home Affairs to give an opinion on whether punishment is excessive, before it comes to the Commissioner for confirmation. Then after the punishment, there must be the restoration. Restoration means how do we help inmates move on, learn and become better. If we don't, then we'll only have hardened inmates.

So hard choices, especially in a resource-constrained environment, when you have to decide where to cut, what to cut, when everything is equally important – in the end, it's about balancing the trade-offs. Sometimes there's never quite a complete balance.

So what keeps you up at night?

Nothing really keeps me up at night. Most of the time, when my head hits the pillow, I fall into quite a deep sleep. Self-care is important. That's something I tell all the officers. Rest is important. Being able to sleep well is important. Typically, if I cannot sleep well, which rarely happens, then it's because something is bothering me, that keeps me awake, some particular issue.

What are the issues?

Incidents that happened on the ground, phone calls or messages that come in the middle of the night or weekends, because typically staff don't contact you at such timings unless something has gone wrong.

But I guess this is normal. I think all the HODs, even the commanders, have that kind of stress because in an operational setting, anything can happen on the ground. It's part and parcel of the job. It's how you manage the stress, and you must have some mechanisms to do it. Typically for me, spending time with the family, long showers, help me to manage my stress. My son still likes me to tuck him into bed, so he has to go to sleep before I can clear my work, or check emails. Laughter. Being able to laugh with your family, laugh at yourself, laugh with your colleagues – all that help.

And try not to think that everything is just dependent on you. Sometimes the stress comes from thinking that I must do something. But worrying about it is not going to help. And you do have a team. If something is really bothering you, share that problem with someone else, and that person may be able to resolve it together with you. Even that process of sharing is quite cathartic, you feel a sense of relief.

We have the death penalty in Singapore, which is carried out in prison. How do you manage officers who might have joined because of the idealism of the Yellow Ribbon Campaign, who believe passionately in second chances, and might have difficulty dealing with execution cases?

I think what you're asking is, what if some of our officers subscribe more to the rehab work, and less to the safety, security, enforcement work. The point is that as uniformed officers, we need to uphold the law, and the carrying out of our legal duties above all else. We're not a social service agency. We grew the Yellow Ribbon cause, our mission encompasses rehabilitation, but the prison service is not a social service agency. We're a security agency with a concurrent social mission, which is corrections, changing lives. If the uniformed officers find that they cannot execute the enforcement mission, then they're in the wrong job. We are very clear when we recruit our officers that as Captains of Lives, our officers know there are two missions in tandem: security and rehabilitation. We must execute the law and carry it out. We need to enforce order and discipline in the prison. Only with safety and security as foundation, can rehabilitation happen.

Our officers recognise that rehabilitation and the Yellow Ribbon cause is also not a lovey-dovey cause. The end outcome is the longer-term protection of society. Yes, it benefits the individual, but for me, the greater outcome or the greater good, of the Yellow Ribbon cause is preventing reoffending. That is the longer-term protection for society because incarceration only affords short term protection. The protection of society in the longer term is done through rehabilitation, through giving our offenders second changes, and also their future generations. You may not think that all offenders deserve a second chance because of what they've done, but they need a second chance, without which it's more difficult or very difficult for them to change if nobody believes in them or wants to give them a job. Then it's a vicious cycle. If you want the long-term protection of society, it's logical, you need to give ex-offenders a chance. So there is a rational side of the argument and it's not just a bleeding heart. I think our officers just have to steel themselves to do the work, to do the security work, the enforcement work as well as the rehabilitation and reintegration work.

SINGAPORE PRISON SERVICE @ 75:
TRANSFORMING CORRECTIONS

Elaine Wong, Jaiy Santosh, Loganathan S/O Vadiveloo & Pamela Phor
Singapore Prison Service

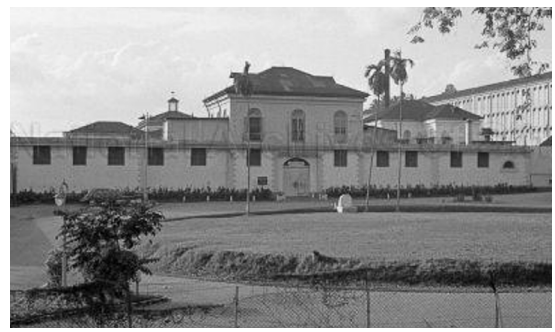
The Singapore Prison Service (SPS) marked its 75th year as a government department in 2021. The journey has seen it evolve from a system focused largely on retributive justice to one that prioritises the rehabilitation and reintegration of inmates into society. Initially, prison reforms came about as a result of recommendations made by commissions of inquiry convened by the government. From the 1980s onwards, however, many of the changes were driven by the service's own leadership.

THE EARLY DAYS

Singapore's penal system goes back to 1825 with the arrival of the first batch of convicts from British India (McNair, 1899). The British believed then that sending convicts to serve their sentences as forced labour far from their homes was more effective in deterring crime than other more punitive measures (Tan, 2015). Convict labour "literally built early Singapore", including the first prisons, Bras Basah Jail and Outram Prison (Cornelius-Takahama, 2018).

When convict transportation to Singapore ceased in 1873, the prison institutions continued to be managed by colonial administrators until the Second World War. In 1946, the Prisons Department, now known as SPS, was formally instituted as a government department to oversee the management of prisons.

The first move towards a more rehabilitative approach began with the 1948 Prison Enquiry Commission. It was formed to review and improve prison conditions, and the reformative treatment of inmates. Among the changes recommended was a change in designations of prison staff to titles less connected to "retributive treatment" *(Annual report of Singapore prisons for the year 1948, 1949)*. A Prisons Training School was set up to train new officers on reformative efforts. By 1950, inmates were allowed additional recreational time in the open air on Sundays and public holidays *(Straits Times, 1950)*, and began to receive allowances for their work *(Report of the Singapore Prisons for the Year 1950, 1951)*.



Outram Prison, one of Singapore's earliest prisons located at the foot of Pearl's Hill.

Prisoners of War outside the Changi Prison.

As Singapore began to move towards self-governance in the 1950s, there was an increasing call to recruit locals to fill senior prison officer positions often held by expatriates in the past *(Interim report of the Malayanisation Commission, 1956)*. To equip these local officers with the necessary skills, the best of them were sent overseas for prison training courses. Singaporeans began to fill the position of Director of Prisons from 1963, starting with Frankie Lee

Siew Kwong, who served as the Acting Director of Prisons from 1963 to 1965.

FROM CUSTODIAL CARE TO REHABILITATION & REINTEGRATION

Self-governing Singapore inherited a prison system faced with many challenges –overcrowding, inadequate staff, and low staff morale (Annual Report, 1992). In November 1959, the newly-elected government of the State of Singapore appointed an inquiry commission chaired by C. V. Devan Nair to "review the whole system and operation of the Singapore Prisons Department", including "the problems of classification, training, discipline and the re¬habilitation of prisoners; and the organisation of aftercare". Nair, a member of the ruling People's Action Party's central executive committee, had just spent three years in a British-run detention facility, his second stint for anti-colonial activities.

The Commission's report, presented to the Legislative Assembly in 1961, was pathbreaking in laying down the following "general principles and considerations" for the re-organisation of Singapore's prison institutions:

> The most obvious and fundamental of these considerations is that the true object of the prisons system is to achieve the rehabilitation of offenders so that they can return to the community as law-abiding and socially useful persons. To regard prison institutions as fulfilling a purely custodial function, with only minor emphasis placed on the more positive aspects, would be to lose a major opportunity to rehabilitate offenders. Even though the effects of rehabilitation may appear intangible and not reducible to demonstrable profits on a balance sheet, they are nevertheless real, in that a reformed offender ceases to be an expensive liability and becomes an economic and social asset to the community…
>
> [T]he successful transformation of our prison institutions in accordance with the objective of social rehabilitation of the offender will depend to a large extent on the recognition given to this ideal by society at large. It follows that the orientation of the prison system to this objective will require, in particular, the understanding participation of Legislators, members of the Judiciary, the Police, Voluntary Organisations and last, but not least, of the Government of the State and its various Departments. The problem of crime and criminals is one which concerns the whole community. What this demands is nothing less than that all the effective resources of the community should be engaged in the common task of rehabilitating prisoners and so reducing crime (Report of the Prison Inquiry Commission, 1960, emphasis added).

The commission thus recommended that the Prisons Department shift its focus from custodial care to rehabilitation. This would entail a reorganisation of the department into a "Rehabilitation Service" that would be "suitably trained to perform the arduous and highly skilled task of rehabilitating criminally maladjusted members of the community". The commission also recommended the formation of a Prisons Social Service alongside the Rehabilitation Service. The main function of the Social Service would be to "concern themselves with the care of prisoners on discharge to ensure their proper re-adjustment into society" (Report of the Prison Inquiry Commission, 1960). This marked Singapore's first foray into the aftercare of inmates.

An Ad Hoc Committee comprising three members of the above Prisons Inquiry Commission also proposed the Pulau Senang Scheme to improve the state of detention and rehabilitation of the criminal law detainees. The report stated that every effort should be made to submit the detainees to positive rehabilitative treatment while in detention, and the Pulau Senang Settlement represented a "hopeful beginning in this field."

Pulau Senang was gazetted as a prison in June 1960. Detainees were transferred to Pulau Senang to continue their rehabilitation through labour, after completing their first stage of detention in Changi Prison. The supervisory arrangements for the settlement allowed for no firearms to be carried by the staff and the detainees had access to implements needed to their work, such as hoes, parangs, metal pipes and other materials. On 12 July 1963, a group of detainees staged a violent revolt that resulted in the deaths of the Superintendent and two settlement attendants. 59

detainees stood trial for their part in the revolt, of which 18 were sentenced to death for murder. As to what led to the riot, the Appeals Court found that "not one of the fifty-nine accused gave evidence to suggest that he or any other detainee was treated in a way which would in any way lessen a normal individual's power of exercising self-control" (Tan & others v. the Public Prosecutor, 1965). The settlement was closed after the riot, and all detainees were transferred to Changi Prison.

In 1974, the Prisons Reorganisation Committee led by the then Permanent Secretary (Home Affairs) Tay Seow Huah carried out a review of the system of rehabilitation in prisons. The Committee called for industrial training and work to become the primary mode of rehabilitation of inmates, to prepare them for their eventual reintegration into the national workforce. The prison industries were then reorganised as an independent statutory board known as the Singapore Corporation of Rehabilitative Enterprises (SCORE), which was renamed Yellow Ribbon Singapore (YRSG) in May 2020.

SCORE Laundry in the 2000s.

BECOMING CAPTAINS OF LIVES

From the late 1980s, the focus of the department was to improve professionalism and to work towards a more rehabilitative regime. In 1988, the department introduced the Prison Scheme of Service to boost staff morale and attract new recruits of high calibre to join the service (SPS website, 2021). It also developed its first service mission and management philosophy. The service mission was:

> To strive for excellence and professionalism in support of the Singapore criminal justice system in the safe custody, humane treatment and successful rehabilitation of offenders, in preparing them for return to society as law-abiding citizens.

Under the new management philosophy, the department was committed to developing each officer to his/her fullest potential (Annual Report, 1991).

The mission statement was revised in 1995 to reflect the role of the department from a supporting player in the criminal justice system to a key contributor to society:

> To protect society by ensuring the secure custody of offenders in a humane environment and to facilitate their return to society as law-abiding citizens by providing rehabilitative opportunities (Annual Report, 1996).

The overall recidivism rate in the 1990s, however, remained high, ranging from 40 to 50 per cent. In 1998, the SPS embarked on a re-visioning of the role of prison officers, and developed a new rehabilitative framework with the intention of placing greater emphasis on the roles of prison officers in the rehabilitation process. In 1999, SPS revised its mission statement to reiterate the dual roles of secure custody and rehabilitation of inmates. It unveiled these mission and vision statements:

- Mission: As a key partner in Criminal Justice, we protect society through the safe custody and rehabilitation of offenders, cooperating in prevention and after-care.

- Vision: We aspire to be captains in the lives of offenders committed to our custody. We will be instrumental in steering them towards being responsible citizens, with the help of their families and the community. We will thus build a secure and exemplary prison system.

An SPS recruitment photo in the 2000s.

The term "Captains of Lives" was introduced to encapsulate the work of prison officers as positive influences on the lives of inmates. This helped to improve the public image of prisons and prison officers, resulting in the recruitment of higher calibre candidates aligned to SPS mission. Under the new rehabilitation framework, inmates were matched to rehabilitation programmes based on their risk and needs. Rehabilitation consisted of three phases: in-care, halfway care and aftercare (Tong, 2010), to ensure structured support for inmates from the moment they are incarcerated following their sentencing, to their release.

Since then, SPS has embarked on many initiatives to strengthen its operational effectiveness and expand its rehabilitation capabilities, including the establishment of Changi Prison Complex and expansion of community corrections.

BUILDING INFRASTRUCTURE AND NETWORKS

In the 2000s, SPS began a series of major infrastructural changes with the consolidation of standalone prison institutions into the Changi Prison Complex with purpose-built facilities to create a conducive environment for the safe and secure custody and rehabilitation of inmates. The infrastructural developments and use of technology boosted operational efficiency, and allowed more time for prison officers to focus on the engagement and rehabilitation of inmates (Annual Report, 2010).

Community Support

With community support identified as key to the successful reintegration of ex-offenders, SPS and YRSG initiated the CARE (Community Action for the Rehabilitation of Ex-Offenders) Network in 2000 to engage the community in rehabilitation and coordinate the efforts of various aftercare agencies (Chua, 2012). One example of a CARE Network community initiative is the Yellow Ribbon Community Project, which is a grassroots-led initiative involving volunteers from participating grassroots division who visit families of newly-admitted inmates to help them connect to available avenues of social assistance. In 2004, the CARE Network launched the Yellow Ribbon Project (YRP) to gain greater acceptance and support for ex-offenders in society. Various YRP events such as the YR Prison Run, Songwriting Competition, Culinary Competition and Community Arts and Poetry Exhibition, have been organised to raise awareness, generate acceptance and inspire community action to support the rehabilitation and reintegration of ex-offenders into society. Over the years, SPS has also engaged the support of many community partners and volunteers to support its rehabilitation work. Today, there are over 3,600 volunteers and 80 community partners supporting inmates, ex-offenders and their families in their rehabilitation and reintegration journey.

In recent years, SPS has expanded community corrections to further facilitate inmates' reintegration into society in a safe manner. The number of suitable inmates serving the tail-end of their sentences in the community under supervision has increased from 2,415 in 2019 to around 3,400 supervisees (inmates serving the tail-end of their sentences in the community under Community-Based Programmes) in 2021 (SPS Annual Statistics Release, 2022). They are

Clusters A and B of the Changi Complex.

Launch of the Yellow Ribbon Project in 2004 by the late S.R. Nathan, former President of Singapore.

Participants of the Yellow Ribbon Prison Run 2013 forming a human yellow ribbon.

The Selarang Park Complex is an integrated facility that incorporates advanced technology.

An inmate undergoing a psychology-based correctional programme conducted by a Correctional Rehabilitation Specialist.

Selarang Halfway House, the first Government-run halfway house.

A Reintegration Officer having a check-in session with her supervisee on Community-Based Programme.

engaged in meaningful employment, training and rehabilitative interventions in the community. Research shows that the community setting benefits inmates as they can learn to deal with their challenges in real life, while receiving support from the SPS Reintegration Officers, Correctional Rehabilitation Specialists, Career Coaches and community partners who offer support such as financial and social assistance. The Selarang Park Complex was officially opened by Minister for Home Affairs and Law, K Shanmugam, on 22 April 2021. It consists of facilities such as a Work Release Camp and a Halfway House, to provide ex-offenders structured support and a gradual transition from prisons to the community.

SPS @ 75

Today, SPS is recognised as one of the thought leaders in corrections, with stellar records in safe and secure custody, as evident from its consistently low assault rates and zero escape rates, as well as rehabilitation. Besides being active at international platforms like the Asian and Pacific Conference of Correctional Administrators and International Association for Correctional and Forensic Psychology, SPS also organises events like the Asian Prison Lockdown Challenge, as well as Yellow Ribbon Conference and webinars to promote learning among correctional agencies internationally. Strong community partnerships and support for second chances for ex-offenders have also helped to keep recidivism rates in Singapore low and stable. The latest two-year recidivism rate for the 2019 release cohort is 20.0 per cent (SPS, 2021), which is the lowest in the last 30 years.

These achievements have been possible because of the work of past generations of Captains of Lives, and community partners who have been relentless in their support of the rehabilitation cause. As Commissioner of Prisons Shie Yong Lee often reminds SPS officers: "Our vision of

preventing re-offending and transforming lives leads to not only a safer Singapore but also stronger families, when every reformed ex-offender is a better citizen, better neighbour, better parent and better child."

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As a correctional agency, the Singapore Prison Service enforces the secure custody of offenders and rehabilitates them for a safer Singapore.

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CENTRAL NARCOTICS BUREAU @ 50:
FIGHTING FOR A #DRUGFREESG

Sng Chern Hong
Central Narcotics Bureau

"Today, Singapore is relatively drug-free. Our situation is under better control than most other countries. The number of drug abusers arrested annually in Singapore has fallen to about half that in the mid-1990s. Our drug situation contrasts sharply against countries with more permissive approaches. Because of our strict anti-drug approach, Singapore has been able to keep our people safe from these problems. Today, there are no open drug markets and drug ghettos in Singapore. Nor is there a problem of drug overdose deaths."

Prime Minister Lee Hsien Loong
7 December 2021

PREVENTING HARM FROM DRUGS

Singapore's battle against drug addiction can be said to have begun in 1848 when a study on opium smoking by a British government surgeon, noting its "evil" effects on the bodily health and "morals of its victims", and the "fearfully rapid" spread of this vice, argued that "the arrestment of it has become a sacred duty of the government" (Little, 1848).

It would, however, take a century before opium smoking was banned in Singapore, so lucrative was the opium trade in the 19th and early 20th centuries. By the time the British colonial government enacted the Dangerous Drugs Ordinance in 1951, the list of "dangerous drugs" included not just opium, but also cannabis, morphine, cocaine and heroin (Tan, 2006).

As a sovereign state, Singapore has come a long way in its fight against drugs, battling both history and geography to achieve the drug-free lifestyle that most of its citizens enjoy today. This is the result of Singapore's early decision to adopt a zero-tolerance policy against drugs and the unrelenting efforts to implement this policy based on the belief that together, the nation can prevent harm caused by drugs.

In the late 1960s and early 1970s, methaqualone (MX pills) and cannabis were the drugs of abuse. This has been attributed to the rise of the hippie culture during that period, where an estimated 5,000 to 7,000 adolescents and young adults were experimenting with drugs both at home and in public places like hostels, parks, football fields and the common stairways of apartment blocks (Lee, 2021). In short, there was a drug crisis.

It quickly became apparent to the Singapore government that the lack of a dedicated agency to prioritise the fight against drugs was hampering its anti-drug efforts. On 12 November 1971. CNB was set up to lead the fight against drug trafficking and abuse in Singapore. Over the last 50 years, the CNB story has been one of relentless hard work to stay on top of an ever-evolving drug situation.

Former CNB Headquarters at Outram Park

By the early 1970s, heroin was already taking over the illicit drug scene, making its way into Singapore after the withdrawal of US troops at the end of the Vietnam War led to a drug surplus.

To soak up the excess supply and open up new markets, drug lords in the Golden Triangle shipped the drug into Southeast Asian countries, including Singapore.

The fledgling CNB was tasked to turn the tide against heroin. Back then, it was already apparent that enforcement alone was not enough to deal with the problem. In February 1973, Chua Sian Chin, the Minister for Home Affairs, introduced the Misuse of Drugs Act (MDA) in Parliament, with heavier penalties provided for various drug offences. Still, the number of heroin addicts arrested grew from 10 to 2,263 from 1973 to 1975 (Jayakumar, 1983).

In November 1975, Chua told Parliament that the penalties introduced barely two years ago had not sufficiently deterred traffickers (Chua, 1975). The MDA was then amended to introduce the death penalty for traffickers caught with large quantities of drugs to deter drug trafficking. "If drug abuse were to be allowed to grow unchecked, we would eventually be faced with a dangerous national security problem," Chua said. "Rampant drug addiction among our young men and women will also strike at the very foundation of our social fabric and undermine our economy."

OPERATION FERRET, THE FIRST SUCCESS AGAINST DRUGS

Even with the tougher measures, the number of heroin abusers arrested further spiralled to 5,682 in 1976 and 7,372 in 1977. By that year, 1% of Singapore's population was estimated to be addicted to drugs, mainly to heroin. Drug addicts could be seen at almost every street corner of Singapore's "black areas" where drugs were sold openly (Lee, 2021), leading the government to conclude that as long as there was sufficient demand for illicit drugs, traffickers would continue to bring drugs into the lucrative Singapore market. CNB was tasked to round up as many drug addicts as it could, after which they would be sent for treatment and rehabilitation. Through the reduction in the demand side of the market, it was hoped that there would also be a corresponding drop in drug supply. This culminated in Operation Ferret, a multi-agency anti-drug operation involving the CNB, Singapore Police Force, Department of Scientific Services in the Ministry of Health, Prisons Department, and Customs and Excise Department. CNB and the police would carry out the drug arrests, after which the Department of Scientific Services would analyse the urine samples of those rounded up. If tested positive, the addict would be sent to a drug rehabilitation centre operated by the Prisons Department. In short, it was a Home Team joint operation (although the term had not then been coined).

Operation Ferret marked Singapore's first success in the fight against drugs. Over a few days in April 1977, some 8,000 suspected drug abusers were rounded up. The price of heroin per straw sky rocketed, a sign of a heroin shortage. The series of raids that lasted into February 1978 netted a total of 26,376 suspected drug abusers, among which 7,348 (or 28%) tested positive for drugs (Lee, 2021). The intensive 11-month long anti-drug operation put an end to the open sale of drugs. Death by drug overdose also became a rare occurrence.

1978 also marked the beginning of CNB's involvement in supervising former drug addicts after their release from rehabilitation to ensure that they stay drug-free. Supervisees had to report for urine testing either weekly or twice weekly for up to two years following their release. The supervision regime gives CNB a unique role in both enforcement against drug abuse while providing aftercare post-release.

Depositing urine samples in secured containers for submission to laboratory for analysis

1990s – THE DETERIORATION IN DRUG SITUATION

In the early 1990s, the drug situation deteriorated. In 1994, 6,165 addicts were arrested, compared to 3,132 in 1987, an increase of about 97% in seven years. An estimated 8,000 to 10,000 families were harmed each year by drug addiction (Lee, 2021). The problem of illegal drugs once again became a national priority. All 200 CNB staff

were swamped and overstretched. As a ringing endorsement of CNB's importance in the fight against drugs, the staff strength of CNB was more than doubled. In 1994, CNB reached another developmental milestone when it was tasked to be the lead agency in preventive drug education. By the end of the 1990s, CNB was far larger than it was at its inception, with a headcount of over 600. This increase in manpower together with the restructuring of the organisation resulted in a more focused, more efficient and more capable agency.

2000s – THE RISE OF SYNTHETIC DRUGS

The drug scene underwent another change in the late 1990s to early 2000s. Synthetic drugs like methamphetamine (also known as Ice), Ecstasy and ketamine made their way into the drug scene and were especially popular as party drugs with young drug abusers. In 2003, the number of abusers of these drugs was almost twice the number of heroin abusers arrested. (A reason for the drop in the number of heroin abusers arrested was also due to the introduction of Subutex (buprenorphine) as a drug substitution treatment for heroin addicts from 2002 to 2006.)

To deal with the problem aggressively, CNB launched Operation Whirlpool that targeted nightspots in 1997. Two local drug syndicates were smashed overnight. The intensive raids also resulted in the seizure of 24,000 Ecstasy pills in 2001, while the number of Ecstasy abusers fell from 661 in 1996 to 151 in 2001. As for the other synthetic drugs, methamphetamine continues to be of concern today due to Singapore's proximity to drug producing areas.

EARLY 2010s – NEW PSYCHOACTIVE SUBSTANCES

From 2010 onwards, New Psychoactive Substances (NPS) appeared on the international drug scene. Marketed by illicit drug manufacturers as "legal highs" and "bath salts", among other names, NPS are substances that produce the same or similar effects as controlled drugs such as cannabis, cocaine, Ecstasy, methamphetamine or heroin. Creating novel NPS variants is relatively easy, and traffickers readily switched supplies to new uncontrolled variants once a NPS was made a controlled drug. This made investigations and follow-up actions difficult, but also led to innovation in the way drugs would be listed in the MDA to tackle this new challenge. The 'traditional' way was to identify the problematic chemical associated with the drug and have it listed in the MDA as a controlled drug whereupon all the provisions would apply. However, this method was reactive and could not match the large numbers of NPS which were regularly introduced into the drug scene. Many of the chemical structures of these NPS were unique but also shared the same core molecular structure. To address this, CNB began adopting the generic listing approach that targets the core structure and specific substitution patterns. This means that any NPS which has that core structure and substitution pattern is now deemed as a controlled drug, allowing CNB to take action against the offenders.

Current CNB Headquarters at Police Cantonment Complex

FROM 2014 TO PRESENT

The Mandatory Aftercare Scheme was introduced in 2014 to support former inmates with a higher risk of re-offending after release. Former drug offenders placed under the scheme were initially to be under CNB's supervision for up to two years; this supervision period was extended to a maximum of five years in 2019.

To provide improved support to former drug offenders, CNB strengthened its supervision regime in 2021 through the launch of the Community Supervision Skills training programme for its supervision officers to equip them with knowledge and skills to guide their supervisees through their re-integration journey. Under the improved supervision programme,

CNB officers attend to their supervisees' wider range of re-integration needs, including financial, accommodation and employment needs.

INNOCULATING THE YOUNG AGAINST DRUGS

The social landscape which CNB operates in has also changed. The internet age has enabled the widespread sharing of misinformation about drugs and their harms and risks, influencing perceptions, especially among the younger generation. Traffickers have also turned to encrypted messaging applications to advertise and conduct drug businesses, complicating investigative work.

CNB has also had to constantly reinvent itself in its preventive education efforts to keep the public engaged in the fight against drugs.

The early days saw the dissemination of anti-drug information via a top-down approach. To communicate more effectively with millennials and Generation Z youths, CNB's outreach and engagement capabilities have undergone major transformations through using both online and offline engagement platforms with nuanced messaging grounded on evidence-based narratives. Today, it takes a collaborative approach with tertiary institutions to co-create campaigns, messages and programmes that resonate better with the younger generation. These preventive drug education messages are further amplified by partners and advocates who are aligned with our vision. The joint efforts are paying off as a public perception survey conducted by the National Council Against Drug Abuse in 2019 showed that over 80% of the respondents supported Singapore's zero-tolerance stance on drugs.

CHALLENGES AHEAD

Singapore is located in a region of plentiful supply, and stands particularly vulnerable to the continued deterioration of the drug situation and the weakening of international resolve against drugs. Some jurisdictions, having failed to deal with the drug problem effectively, have resorted to harm reduction strategies, decriminalising or legalising drugs. Given our relatively drug-free society, alternative drug approaches that seek to decriminalise and/or legalise drug use are not relevant to us. On the contrary, such approaches may undermine or even reverse all the successes that we have achieved all these years in working together as a nation to keep Singapore drug-free. The fundamental principle underlying Singapore's approach to drugs is to prevent harm to our people and society. We believe that this is much more effective than letting the drug problem fester and only then, after it has happened, to try to reduce the harm.

Preventive drug education therefore forms the first pillar of our harm prevention approach, and is also the first line of defence in Singapore's overall drug control strategy. The approach places a strong emphasis on the demand reduction of illicit drugs by educating youths on the dangers of drug dependence, and engaging community partners and the public to sustain a national consensus of zero-tolerance on drug abuse. Singapore's achievement to contain the local drug situation is a testament to the success of our national strategy of effective preventive drug education, tough laws and robust enforcement, evidence-informed treatment and rehabilitation, aftercare and reintegration. In 2016, during the United Nations General Assembly Special Session on World Drug Problem, Mr K Shanmugam, Minister for Home Affairs and Minister for Law, defended Singapore's approach with this challenge: "I am prepared to compare our experiences with any city that you choose. Show us a model that works better, that delivers a better outcome for citizens, and we will consider changing. If that cannot be done, then don't ask us to change" (Shanmugam, 2016).

THE NEXT 50 YEARS

On the 50th anniversary of the formation of CNB, it is apposite for us to look back and appreciate the contributions made by generations of CNB officers, sedulously building up the bureau's capabilities, transforming it to its current state of a leading drug enforcement agency, recognised and valued by both regional and international counterparts. While we celebrate CNB's successes and transformation, we should treasure one aspect that remains constant over the years, that has withstood the test of time and is key to the success of the bureau – the

dedication and commitment of CNB officers to pursue the vision of a drug-free Singapore. It is such tenacity, regardless of the challenges ahead, that will see CNB through for another 50 years and beyond, protecting Singaporeans from the drug scourge.

ABOUT THE AUTHOR

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is the Deputy Director of the Central Narcotics Bureau overseeing the areas of policy and administration. He joined CNB in 2000 and had taken on various operational positions over the years, including in the Intelligence Division, the Investigation Division, the Enforcement Division and the Operations Division. In his previous post as Director, Communications Division, he led the preventive drug education strategies, and outreach and engagement efforts to bring across the harms of drugs to the wider community and to advocate for a drug-free Singapore.

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HOME TEAM ACADEMY @ 15:
TRANSFORMING INTO A LEADING CORPORATE UNIVERSITY IN HOMEFRONT SAFETY AND SECURITY

Hannah Wong, Melissa Teh & Kelvin Lim
Home Team Academy

ABSTRACT

The establishment of the Home Team Academy (HTA) in 2006 was a milestone in the manifestation of the Home Team concept. In the last 15 years, HTA has served as a common training environment where officers across all departments are inculcated with shared values, ethos and ethics as they acquire the competencies to do their jobs. The joint training culture fostered by HTA has also enabled Home Affairs departments to collaborate more closely to tackle dynamic homefront safety and security challenges. Today, HTA has evolved into a key player within the Home Team's training ecosystem, taking the lead on cross-cutting training, and continuing to drive a One Home Team identity. As the corporate university of the Home Team, HTA embodies the spirit of the Home Team and has multiple touchpoints with each Home Team officer at different stages of their career and learning journey. Its pinnacle leadership training programmes help Home Team leaders stretch themselves intellectually while providing them opportunities to bond with their peers. This article documents key milestones in HTA's transformation journey from training academy to corporate university. These include the set-up of centres that cater to the varied training needs of the Home Team, and the launch of key programmes which have become significant rites of passage for Home Team officers. It also describes how HTA has adopted the use of innovative training technologies and grown through valuable partnerships. The article concludes by sharing key upcoming transformation plans as HTA aspires to become the Centre of Excellence for Training & Learning in the safety and security areas both nationally and beyond.

TRAINING AS ONE HOME TEAM

As the corporate university of the Home Team, the Home Team Academy (HTA) plays a crucial role in the Home Team training and learning (T&L) ecosystem. HTA develops Home Team leaders, trainers and officers to ensure that they are equipped with the cutting-edge skills and knowledge needed to achieve the mission of keeping Singapore safe and secure, as one Home Team.

As HTA celebrates its 15th year, it is timely to revisit some of HTA's key achievements over the years and explore the new frontiers it is moving towards.

Founded in September 2006, HTA was inspired by the Home Team concept first introduced by then Deputy Prime Minister and Minister for Home Affairs Wong Kan Seng in 1995. The Home Team concept centres around the idea that while the Home Team comprises many different agencies, they all share a common mission to work as one to keep Singapore safe and secure. In this respect, the establishment of HTA marked a key milestone in the Home Team's journey of joint training and operations. As Mr Wong said at the Home Team Workshop 2006 prior to HTA's launch, the Academy is a "common training environment" for Home Team officers to "develop a network of contacts and friendships" and for each officer to "see himself as part of a larger family of professionals united by a common mission" (Wong, 2006). At its core, the Academy represents where the Home Team comes together through aspirations of unity and as Home Team officers bound by a code of honour and energised by a training culture that emphasises professional excellence in support of national goals.

Initially named the Law Enforcement Academy, it was renamed the Home Team Academy to better reflect the common mission of the Home Team. Bringing together the joint training elements of the

Figure 1. The Academy's ground-breaking ceremony on 28 November 2000 to mark the start of its construction was officiated by then Minister for Home Affairs, Mr Wong Kan Seng (centre) and attended by then Director, Internal Security Department, Mr Benny Lim (leftmost), then Commissioner of Police, Mr Khoo Boon Hui (second from left), then Permanent Secretary, Ministry of Home Affairs, Mr Tan Guong Ching (second from right) and then Commissioner of the Singapore Civil Defence Force, Mr James Tan (rightmost).

Home Team, HTA serves as a common training environment where officers across all departments are inculcated with shared values, ethos and ethics while acquiring professional competencies and networks that enable departments in the Ministry of Home Affairs to collaborate more closely to tackle dynamic homefront safety and security challenges.

In its foundational years, HTA institutionalised the paradigm of training excellence as a pre-requisite for operational excellence and championed the development of a professional training cadre in the Home Team. The first Chief Executive of HTA from its founding to 31 March 2009, Tay Swee Yee, noted that in the Academy's early years, it "conceived and imparted relevant skills to the Home Team officers to further align their training to existing operational practices, infused them with the Home Team spirit, provided an environment for them to build enduring bonds of friendship so as to form a cohesive team, and prepared them to face an uncertain world" (Tay, 2009).

BECOMING THE CORPORATE UNIVERSITY OF THE HOME TEAM

From the outset, HTA established a fundamental fact: T&L is integral to ensuring that Home Team officers are equipped with the right skillsets and competencies to prepare for and rise above the present-day and future challenges and responsibilities. This also meant there was a pressing need for HTA to transform itself to ensure the continued mission success of the Home Team. HTA had to transform and ensure that it equips Home Team officers with the strategic and transformative knowledge and skills required, while ensuring that such T&L interventions are accessible, timely and close to reality. This is crucial especially in today's volatile, uncertain, complex and ambiguous world.

In 2016, the Academy started its transformation into the corporate university of the Home Team with the aim of upgrading Home Team officers' skills and capabilities to develop future-ready Home Team

officers. This marked the transition of HTA from a training academy to a corporate university that enables corporate change across the Home Team and forms strategic partnerships with institutes of higher learning to access the expertise and knowledge needed by Home Team officers.

The Academy's strategic shift to become a corporate university marked its move beyond providing training programmes towards meeting MHA's strategic manpower needs through a suite of end-to-end T&L programmes covering leadership and trainer development, civilian milestone programmes, cross cutting skills, and Continuous Education and Training (CET) across the Home Team departments. As the platform to cascade Home Team-wide content, HTA also continues to foster greater Home Team integration through the inculcation of Home Team identity, values and ethos, and the building of horizontal capabilities such as joint operations.

As the corporate university of the Home Team, HTA is at the centre of the Home Team training and learning (T&L) ecosystem. This has enabled the Academy to prioritise T&L at key milestones of a Home Team officer's career and to focus on the development of T&L technologies.

PEOPLE DEVELOPMENT THROUGH TRAINING & LEARNING

In its early years, HTA's key focus was homefront security and safety training. The Academy focused on establishing the foundations of a training institution with a focus on spearheading training in counter-terrorism, crisis management and emergency preparedness, and conducting a wide range of programmes in behavioural sciences and crisis leadership development.

Early offerings included the quarterly Home Team Basic Course for new entrant Home Team uniformed service officers, civilian senior officers and selected full-time national service personnel to receive an introductory perspective to the joint operational roles of the Home Team in its fight against terrorism. There was also the Home Team Advance Course for Senior Officers and the Home Team Advance Course for Junior Officers conducted twice a year for mid-level senior and junior officers respectively to provide a more strategic perspective on counter-terrorism and to impart supervisory and managerial skills. For Home Team officers who progressed to senior command positions, there was the Home Team Senior Command and Staff Course, an annual leadership programme that has continued to this date.

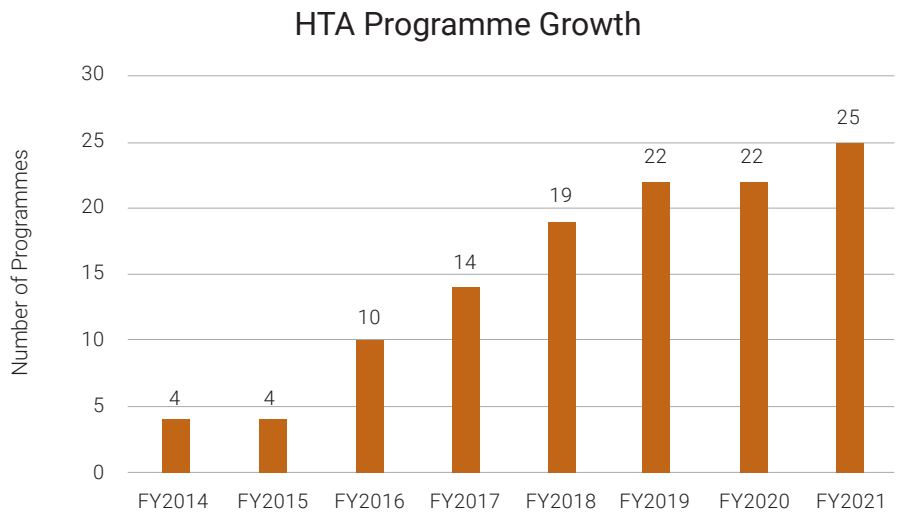

Figure 2. Growth of HTA's Training and Learning Programmes

Being at the centre of the Home Team T&L ecosystem, HTA is in the position to bring Home Team leaders, trainers and officers together through multiple T&L touchpoints through various milestone programmes. It also reviews training modalities and technologies to enhance learning effectiveness and provide a better learning experience for Home Team officers. The Academy's efforts have resulted in a significant increase in new programmes and programme runs, as the chart in Figure 2 shows.

TRAINING AND LEARNING FOR LEADERS, CIVILIAN OFFICERS AND TRAINERS

The Academy leads efforts in cross-department developmental training in the areas of leadership development, training for civilian officers who take on different roles from their uniformed counterparts and upskilling for Home Team trainers who require specific skill sets.

Leadership Development

Strong and effective leadership is essential for the Home Team to stay ahead of challenges in an increasingly complex operating environment. The Home Team Centre for Leadership was formed in September 2018 to anchor the Academy's full suite of Home Team leadership training which entails programme development and outreach, programme delivery and resource management, and leadership measurement and analysis. Under the Centre's leadership, the Home Team revamped and expanded on its suite of leadership programmes including the Home Team Senior Command and Staff Course.

Today, across the Home Team and varying schemes of services, HTA develops high quality leadership programmes to prepare Home Team leaders for current and future leadership responsibilities. There are four milestone leadership programmes to provide timely and structured interventions over the course of an officer's career, namely the Phoenix Programme, the Home Team Senior Command and Staff Course, Home Team Advanced Leadership Programme, and Home Team Leadership Programme. HTA also took over the administration of the Home Team Leaders in Development Programme from Ministry Headquarters in 2019. Collectively, these programmes aim to develop future Home Team leaders capable of leading teams successfully and possess awareness of issues that shape the country's strategic environment.

Beyond leadership programmes for our Home Team officers, HTA is also increasingly serving the training needs of Whole-of-Government (WOG) leaders in the area of safety and security. HTA had been organising the Introduction to Crisis Management Course for WOG leaders since 2017. HTA also worked with the Civil Service College to develop a new leadership programme "Leaders in Enforcement Management" in March 2021, to strengthen non-Home Team enforcement agencies' leadership competencies in safety and security.

HTA also began to organise international leadership programmes in 2018 that are establishing Singapore as a referenced centre for safety and security thought leadership, and allows HTA to build a strategic network with the law enforcement community in the Asia-Pacific region and beyond. For example, in September 2018, HTA partnered with the US Homeland Security Department's Federal Law Enforcement Training Centers (FLETC) to organise the inaugural HTA-FLETC International Programme on Crisis Leadership that brought in senior law enforcement leaders involved in the management of past crises, viz. the Las Vegas mass shooting in October 2017, the Nice truck attack in France in July 2016, and the Lindt Café siege in Australia in December 2014, to share their perspectives and insights with participants from 11 countries. As Chris Jones, Deputy Chief of the Community Policing Patrol Division of the Las Vegas Police said: "Sharing information with our international counterparts and how to get leadership to make the right decisions during a crisis. That's what this whole Program is about. It says a lot that Singapore is hosting this. As good as they are, they still want to learn. I'm very impressed overall" (FLETC, 2018).

HTA also organised the inaugural Phoenix International Programme in March 2019 that saw 15 senior level officials from 10 countries take part in a 3-day event in Singapore. Minister for Home Affairs and Law K Shanmugam chaired a dialogue on Singapore's perspectives on public safety and security, while nine experts discussed the management of emerging security challenges such as transnational crime, cyberspace security and terrorism financing. They included Singapore Deputy Commissioner of Police (Investigation and Intelligence) Florence Chua, former director-general

of the UK Security Service MI5 Lord Jonathan Evans, and former US deputy national security adviser for combating terrorism Juan Zarate. Speaking to the media, Zarate described the discussions as yielding "insightful perspectives" on security challenges, highlighting Singapore's efforts to shore up its cyber security following the data breaches in the healthcare sector. "I think part of the reason we have a conference like this is to share lessons learnt, and also to commiserate with one another about where we all have to do better, and perhaps help one another with best practices," he said (Wong, 2019).

Civilian Training

The training of civilian officers is generally overseen by their Home Team departments. To provide holistic and structured development for civilian officers across the Home Team, HTA established the Home Team Civilian Training School in July 2020. The School seeks to develop civilian professionals who are future-ready and able to serve as One Home Team. The School currently manages the full suite of Home Team Civilian Milestone Programmes, i.e. Step-In, Step-Up and Step-Beyond which aim to build a competent civilian workforce and strengthen networks among civilian senior officers.

In collaboration with the Civil Service College, HTA recently redesigned the Civilian Milestone Programmes and will be progressively implementing the enhanced programme. This includes the addition of modules to prepare civilian officers for transformation, and inclusion of analytical and critical thinking skills, and the new Civilian Support Officer Foundation Course that aims to upskill civilian support officers.

Trainer Development

To drive transformation, the Home Team needs robust T&L systems and this necessitates a strong corps of trainers who can deliver effective training to support operations. HTA has developed various trainer development strategies to attract, develop, deploy and recognise trainers.

HTA formalised a Trainers' Competency Development Roadmap in 2009 to guide the professional upskilling of the trainers and to serve as a key impetus for more Home Team officers to take on training roles. While there have been enhancements made to the roadmap over the years, it has continued to form the foundation for the Home Team training schools to grow their instructional capability. The roadmap was enhanced in 2017 to ensure that Home Team trainers will continue to be upskilled with the latest capabilities, including learning methods, curriculum and pedagogy. Particularly in the new normal brought about by the COVID-19 pandemic, there is an accelerated need for trainers to adopt new instructional strategies to engage learners, build connections and nurture digital learning. HTA will develop new Continuous Education & Training initiatives to equip trainers with the skills to facilitate digital learning.

To build capabilities in curriculum design and development, HTA developed the Training Curriculum Masterplan in July 2020 to guide Home Team departments in raising their capabilities to design and develop learning-centric curriculum that optimises training. A customised programme to equip curriculum developers with the desired competencies was conducted in March 2021, with more such initiatives in the works.

PROMOTING HOME TEAM INTEGRATION

As the Home Team's corporate university, HTA is the central touchpoint of Home Team officers as they achieve their career milestones, and therefore plays a fundamental role in the inculcation of Home Team values and promoting Home Team integration through training and heritage development.

Another important milestone in the Home Team's heritage journey was the launch of the Home Team Gallery on 19 September 2008. Officially opened by Professor S. Jayakumar, then Deputy Prime Minister and Coordinating Minister for National Security, the Gallery allows all the Home Team departments to showcase their respective operational achievements and heritage. With exhibits displayed over two levels, the Gallery traced the evolution and the implementation of the Home Team concept and showcased the various missions where the Home Team operated cohesively to safeguard homefront safety and security. Since its operation, the Gallery has received more than 74,000 visitors from the Home Team departments, schools as well as local and overseas visitors. A refresh of the Gallery is currently in the works to incorporate new technology for a more immersive experience so that the Gallery

will continue to effectively illustrate the Home Team departments' shared history and common mission when it reopens in mid-2022.

In addition to the Gallery, another crucial repository marking the Home Team's journey through the years is the Home Team Journal. The Journal was officially launched on 23 October 2009 by then President S R Nathan, who expressed his hope that the Journal will "capture the experiences of Home Team officers and their foreign collaborators for the future benefit of a strong and formidable culture and knowledge for the Home Team community and its associates" (HTA Annual Report, 2010). Today, the Journal continues to live up to its promise to serve as a platform by practitioners for practitioners, allowing Home Team officers to showcase and share their expertise in diverse operational areas in homefront security, law enforcement, border control, and custody/rehabilitation of offenders, thus deepening the cross-departmental knowledge of Home Team officers.

Foundation Training

Staying true to its purpose of cultivating a One Home Team operating culture, HTA also promotes Home Team integration and collaboration through courses and other initiatives. Since 2018, HTA has been organising the Home Team Foundation Course (HTFC) and has implemented the Home Team Ethos, Values and Ethics (E.V.E.) framework to forge integration and a common identity. Customised E.V.E. packages have been implemented in courses for both uniformed and civilian officers.

The Foundation Course, a 2-week residential programme, strengthens the One Home Team culture among new-entrant Home Team senior officers, exposes them to the Home Team's challenges and educates them on how the Home Team is transforming to be future-ready. As the first touch point for all newly appointed Home Team officers, the course sets them on the path to acquiring the Home Team DNA, introducing them to the One Home Team identity by exposing them to the diversity of jobs while equipping them with a network of fellow officers from the various Home Team departments. More than 700 officers have gone through the course since its inception. Beyond the Foundation Course, other HTA programmes provide multiple touchpoints to help reiterate to officers the importance of working together as One Home Team.

In 2021, HTA also identified a set of key common Home Team values and principles to shape understanding of the rationale behind the Home Team's work and has developed a framework to incorporate these values and principles in HTA's courses, from foundation to leadership courses. HTA will also be working with the other Home Team departments to incorporate them in their departmental courses.

Cross-Cutting Skills and Continuous Education & Training

Since 2018, the Academy has been working with the Training & Competency Development Division in Ministry Headquarters, subject matter experts and Home Team departments to curate and implement training to equip Home Team officers with cross-cutting skills. A set of transformational and strategic cross-cutting skills, as detailed in Figure 3 below, have been identified to prepare Home Team officers to meet future challenges, viz. data analytics, design thinking, cyber security, behavioural insights, collaboration and engagement, and technology literacy. HTA has been providing Home Team officers with e-learning and classroom-based training on these skills. As a notable example, HTA has conducted 91 runs of data analytics courses to date for more than 600 officers across the Home Team.

The Academy also collaborated with the Singapore University of Social Sciences on a 4-year full-time direct honours degree programme in Public Safety and Security, which commenced in August 2020. Designed to meet the needs of the Home Team, the programme includes minors in criminology, crisis management and psychosocial intervention. This initiative encourages lifelong learning and allows Home Team officers to fulfil personal aspirations of obtaining a degree. The enrolment capacity for the programme was increased from 60 to 200 with the introduction of a part-time degree programme in 2021. The degree programme has received a total intake of 195 students thus far. To improve the quality of training, HTA has also worked with the university and the Home Team departments to accredit their basic course content, which will count towards a Certificate in Homefront Safety & Security that contributes up to 40 credit units out of the 130 required to graduate with a degree.

Figure 3. Core competencies and skills identified for Home Team officers to develop

Training Safety

At the core of the Academy's T&L efforts, training and trainee safety remains a perennial priority. HTA puts in place different measures to ensure a strong safety culture and provide a safe training environment to safeguard its trainees and learners. Together with the Home Team training schools, HTA established the Training Safety and Audit Framework in 2009 with a key deliverable being the integration of all existing training safety systems within the network of Home Team training schools. That marked the start of regular meetings for training safety practitioners from across the Home Team to cross-share training processes and best practices in training safety procedures. As HTA's then Chief Executive Derek Pereira put it, HTA understood from its early years that the "promotion [of training safety] must be sustained and institutionalised as an integral part of [the] Home Team culture" and the importance of articulating "a Training Safety Strategic Roadmap that aims to make the Home Team an uncompromisingly safe place to work and train" (Pereira, 2010).

HTA conducts training safety audits across the Home Team and regular training safety inspections within HTA as well as annual safety talks to equip Home Team officers with the knowledge to train safely. In 2017, to validate the robustness of its training safety system, HTA attained the OHSAS 18001, an international standard for occupational health and safety, and its successor, the ISO 45001 certification, in February 2020. This certification process also allowed HTA to systematically examine and benchmark the Academy's safety management system against the rigours of an internationally recognised safety standard, thereby improving the overall training safety performance within HTA and the Home Team training schools. In March 2020, in recognition of HTA's innovative training safety practices, it received the Home Team Innovation Award for the Wet Bulb Globe Temperature display panel, a training safety initiative designed to prevent heat injuries.

LEVERAGING TECHNOLOGY AND DIGITALISATION

With technological advancements, new and emerging capabilities have widened the transformative potential of T&L. The future learning ecosystem will be curated towards a continuum of lifelong learning, personalised to the individual, that can be delivered across geographical, media and time boundaries. It requires HTA to continue leveraging technology and digitalisation as force multipliers to deliver enriching learning experiences and achieve meaningful learning outcomes.

In 2020, HTA developed a Technology and Digitalisation Masterplan to ensure HTA's digitalisation efforts support key priorities and strategic business needs. The Masterplan culminates in a smart campus by 2025, with technology capabilities in three areas: smart digital

learning spaces, smart safety and security, and smart infrastructure. This will provide our officers with a seamless and integrated learning experience, and a safe and secure campus environment.

Home Team Training Village

A key T&L facility in HTA is the Home Team Training Village. Designed according to the requirements of the different Home Team departments, the Training Village has been operationally ready for scenario-based training since 2006. The Training Village simulates the urban Singaporean environment and consists of simulated apartment units, shops and moveable props that can be reconfigured to meet different training objectives. Today, HTA's co-located training schools from the Singapore Police Force, Singapore Prison Service and Immigration & Checkpoints Authority continue to train at the Home Team Training Village at specially designed segments that include an innovative firing range, mock prison cells and vehicles modified to facilitate vehicle search training sessions.

HTA is in the progress of completing a physical refresh of the Training Village, to ensure that the facility remains relevant and effective in supporting the Home Team departments' training. HTA is also working with the SPF on a Proof-of-Concept on a Live Instrumentation Training System which allows users to conduct live instrumented training in tactical scenarios in a built-up location, to mimic the ground operational environment. This seeks to enhance training realism and facilitates recording of performance data for analytics and review.

Home Team Simulation System

While the Training Village has provided an effective space for physical scenario-based training, the Academy also had the foresight to plan ahead for innovative simulation training solutions. From as early as 2009, HTA has been exploring simulation training for the Home Team's scenario-based training needs and embarked on a study to develop training simulation systems that can be used by all the Home Team departments. The Academy developed an Exercise Injects and Management System to support and augment the effectiveness of delivery in tabletop exercises for joint operations and crisis management. In subsequent years, HTA continued to explore more advanced training simulation systems capable of providing multi-level and multi-agency scenario-based training for the Home Team and its related agencies in managing complex incidents.

Development of the Home Team Simulation System (HTS2) began in 2016 and it was launched in 2018 to provide a platform for Home Team officers to be trained in managing large-scale security incidents and joint operations in a safe and realistic setting, with lower manpower and operational costs. This has allowed the Home

Figure 4. Mr K Shanmugam, Minister for Home Affairs and Minister for Law, launched the Home Team Simulation Centre on 21 May 2018.

Team to develop greater synergy and inter-operability among the Home Team departments in their preparation for major operations through joint simulation exercises.

The HTS2 has gained global recognition with the Academy being invited to speak at the International Forum for Military and Civil Simulation, Training and Education Community (ITEC) 2019 and the Virtual Simulation Seminar organised by the Swedish Civil Contingencies Agency (MSB) in Stockholm, Sweden. During these forums attended by more than 2000 participants from the military and civil agencies around the world, and industry suppliers for simulation training, HTA shared its expertise on the use of simulation technology to train commanders in incident management and decision making.

HTS2 was also awarded the regional GovInsider Innovation Award (Best Risk Category) in 2019 for being first in the world to deploy together both 'live' simulation (actual command post setup with real time injects) and virtual simulation (virtual 3D environment). The system provides training with greater immersive experience, significantly reduces resources required and tightens the operations and training loop by allowing incidents that happen anywhere around the world to be quickly adapted into training scenarios in the system.

In 2021, HTA achieved another key milestone in simulation training. Together with the Singapore Police Force, HTA set up the first HTS2 satellite centre at the Tanglin Police Division as a Proof of Concept (POC). Through this POC, the Police was able to conduct smaller-scale independent simulation exercises at Tanglin Police Division as well as joint exercises with other units and agencies located at HTA's Home Team Simulation Centre.

Home Team Learning Management System

Since 2015, HTA has stepped up its use of technology to improve training facilities and systems. While T&L is essential to the continuous upgrading and reskilling of officers, one key challenge faced by officers is the lack of time, particularly for frontline officers. With an expected increase in workload amidst the manpower crunch, there is a need to increase the accessibility of T&L to time-strapped officers.

Prior to the launch of the Home Team Learning Management System (HTLMS) in 2016, there was no centralised e-learning system for the Home Team. Currently hosting more than 3,000 online courses across all Home Team departments, the HTLMS serves as the primary e-learning platform for the Home Team and has enhanced the accessibility and interactivity of T&L.

GROWING HTA'S STRENGTHS

Strategic Partnerships

Given the need for resources and expertise beyond the Home Team, HTA proactively reaches out to local and international, professional and academic partners to forge partnerships, build networks and explore collaborations.

On top of collaborating with professional institutions such as INSEAD, the Singapore University of Social Sciences and the Civil Service College on the development of HTA's T&L programmes, HTA also organises lectures and workshops relevant to the Home Team's needs and areas of specialisation. It introduced the Distinguished Visiting Fellowship programme as a platform for HTA and Home Team departments to establish a collaborative partnership with eminent professional and academic personalities who are prime movers or experts in areas such as homefront security and safety, forensics and community engagement. These personalities are invited to conduct lectures or workshops in their subject matter expertise for Home Team senior officers, so that officers are kept abreast of international and regional developments.

Since its inception, HTA has also appointed eminent individuals as advisors to provide HTA with access to resources and deep expertise in the strategic areas relevant to the Academy's organisational development. HTA's Advisory Panel was first set up in 2007 to establish links between HTA and external organisations with similar missions, enable HTA to be plugged into the international professional and academic community and to tap on the Academy's Advisory Panel members' international reputation and network to put HTA in good standing as an international centre of excellence. The current Advisory Panel appointed in November 2019 brings

to HTA expertise in leadership and management, international networking, curriculum development, pedagogies, learning technologies and continuous education and training.

HTA has also established a close partnership with FLETC in the area of law enforcement and security training. The FLETC-HTA Memorandum of Understanding, first signed in 2016, was renewed in September 2019 for another three years, reaffirming the strong relationship and providing a forum for greater collaboration, professional exchanges and information sharing. To further extend the Academy's reach on expertise and resources, HTA will also reach out to other established regional and international institutions.

COVID-19 Operations

As with other public agencies, HTA has also been involved in several COVID-19 operations since the pandemic began in early 2020. HTA operated a Government Quarantine Facility (GQF), alternative housing for relocated migrant workers, and a Dormitory Isolation Facility concurrently from January to July 2020. A 24/7 duty operations team was set up to manage the three facilities while HTA continued to function as the corporate university of the Home Team. It continues to support the national efforts today through the operation of a GQF.

To ensure that T&L continued to remain available to Home Team officers despite the disruptions and restrictions brought upon by the pandemic, HTA quickly redesigned its courses and converted training modalities. During the Circuit Breaker period, e-learning courses continued while face-to-face courses were suspended. Since courses resumed in July 2020, HTA has introduced new training modalities to deliver effective training amidst a new normal, converting suitable courses and modules into e-learning and conducting selected fireside chats virtually.

Awards and Accolades

HTA's transformation could not have been achieved without its people. As the smallest Home Team department with a lean and transient workforce (i.e., many officers are seconded from Home Team departments as part of their posting cycle), it is essential for HTA to ensure a strong corporate culture that the Academy's officers are proud to be a part of. HTA recognises that its people are its greatest asset and prioritises driving both staff welfare and professional development. Its keen focus on people and organisational development has been regularly recognised through various accolades. HTA was awarded the People Developer Standard in 2015. Four years later, HTA was accorded a higher level of recognition for its business excellence and people development efforts, winning the Singapore Quality Class Star with People Niche Certification. In 2020, HTA achieved Silver Award for Excellence in Business Transformation and Bronze Award for Excellence in Workplace Culture at the Singapore HR Excellence Awards. More recently, the Academy received three awards at the Employee Experience Awards 2021 organised by Human Resources Online, namely the Silver Award for Best In-House Learning Academy, Bronze Award for Best Work-life Harmony Strategy and Bronze Award for Best Holistic Leadership Development Strategy.

Figure 5. HTA welcomed its current Chief Executive Anwar Abdullah on 1 August 2021 after the Academy's Change of Command ceremony held on 26 July 2021.

TOWARDS 2025 AND ONWARDS: REACHING NEW FRONTIERS

The Academy aims to become a digitally empowered and future-ready Corporate University of the Home Team by 2025. As highlighted by its current Chief Executive Anwar Abdullah in a video commemorating HTA's 15th anniversary, "HTA will strive towards becoming the Centre of Excellence in the areas of leadership development,

simulation training, evaluation and online learning. [The Academy] will continue to strengthen the Home Team Training and Learning ecosystem and develop skilled Home Team officers who are exemplars of leadership, and trusted, valued and respected members of our community." (Anwar Abdullah, 2021).

For example, to advance towards its aspiration to be the Centre of Excellence in simulation training, HTA will explore the development of satellite centres for other Home Team departments for Home Team-wide joint exercises. To meet the Home Team's future T&L needs, HTA is also working on the development of HTLMS 2.0. The enhanced system will incorporate features such as personalised learning, mobile learning capability and analytics. It will push training to the frontline, facilitate just-in-time learning "anytime, anywhere" through the use of Government Furbished Equipment and in turn tighten the operations-training loop.

HTA will also establish itself as the Centre of Excellence for online learning by taking the lead in building online learning capabilities in the Home Team. The Academy will develop an online learning platform for the Home Team T&L community and share knowledge on online learning through various platforms. HTA will conduct market scanning to facilitate smart buying decisions of services and share best practices and knowledge in online learning with the departments. HTA will also support MHQ's digital upskilling plans for the whole of the Home Team in the development of the Digital Skills Training Implementation Framework.

HTA will continue to prioritise delivering and implementing the Smart Campus projects and other digitalisation and technological initiatives to ensure that it reaches the desired state by 2025. The Academy's T&L approach will also be continuously reviewed and improved upon to deliver effective learning to Home Team officers through virtual learning, new skills training, and a proactive culture of learning.

To ensure that MHA retains a strong footing as a leader of homefront safety and security, HTA will also ramp up its external branding and communication efforts. A greater awareness of the Home Team's well-placed focus on T&L also conveys the Home Team's capability to keep Singapore safe and secure.

HTA also seeks to forge new frontiers and pursue organisational excellence to advance its national and global standing. With quality programmes and initiatives as the basis of HTA's unique value-add, HTA will proactively conduct horizon scanning and futures planning to seize emerging opportunities and build capacity for future readiness. Overall, these efforts cement HTA's evolution from a training academy in its foundational years to the corporate university it has become and will further establish HTA as a world-class T&L thought leader and facility.

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DATA-DRIVEN EMERGENCY RESPONSE: UNLOCKING HIGHER PERFORMANCE WITH DATA ANALYTICS IN THE SINGAPORE CIVIL DEFENCE FORCE

Yeo Wee Teck & Khoo Zhong Xun
Singapore Civil Defence Force

ABSTRACT

The Singapore Civil Defence Force (SCDF) is seeing an increasing demand for Emergency Medical Services (EMS) due to the ageing population. It is not sustainable to increase the ambulance fleet and human resources indefinitely to match the rising demand. SCDF developed the Dynamic Resource Optimisation (DRO) system, based on data analytics, to augment operations planning. The DRO system recommends the optimal placement configuration of resources to achieve a minimum overall response time. Compared to traditional statistical methods, DRO improves the EMS response in the 11-minute zone by a simulated average of 3.7%. Since December 2017, SCDF has used the DRO system to obtain insights into resource placements in the planning for ambulance fleet expansion and dynamic deployment. Results have been encouraging as SCDF's EMS operational response improved from 88.9% in 2017 to 91.8% in 2019.

INTRODUCTION

Owing to medical advancements and the longevity effect, increasing life expectancy and declining birth rates are challenges facing many countries around the world today. Singapore is not spared from this phenomenon; the ageing process is expected to continue across the world and is especially advanced in developed countries such as Japan, Italy, and Germany (Pang & Arivalagan, 2021; The World Bank Group, 2021).

Irregularities in age distribution are undoubtedly detrimental to a nation's labour market. In the case of an ageing population, the challenges extend to providing sufficient and timely medical support, and nursing care for the elderly. Similarly, it has major consequences for emergency response, one of which is the increasing demand for Emergency Medical Services (EMS). This demand encompasses more than the surpassing call load to be managed by call-takers. It also includes the pressing need for more ambulances and paramedics to: (1) keep up to standard response times; and (2) ensure that patients treated at the scene have the transportation required for conveyance to the hospital.

As the core service provider for prehospital emergency care, the Singapore Civil Defence Force (SCDF) plays a critical role in making certain that the provision of EMS is not compromised in view of the ageing and shrinking workforce. The potential of data analytics – the process of examining raw data sets via a specialised system to draw conclusions about the information they contain – is harnessed as a sustainable solution to this problem.

Incident Boundary Code	Total Number of Incidents	Number of Incidents Responded by Other Regions	Number of Late Incidents Responded by Other Regions	Percentage of Timely Response	Number of Incidents per Ambulance
3C	10,440	2,030	720	87.5%	2,640
1A	9,540	2,080	500	85.5%	2,810
4C	5,850	1,560	490	86.0%	2,260
4D	7,480	1,450	470	89.5%	2,810
2B	7,350	1,980	480	91.5%	2,740
2A	6,530	750	220	83.0%	2,460
1E	5,300	1,380	560	87.5%	2,800
1B	5,510	1,490	440	91.0%	2,870
3B	4,940	1,390	490	88.5%	2,660
3A	5,630	1,070	370	92.5%	2,830
2C	5,170	1,620	340	88.0%	2,620
4A	6,630	1,060	220	91.5%	3,160
1C	3,550	590	190	86.0%	2,290
1G	3,230	1,550	250	90.0%	2,240
4B	3,060	360	190	85.0%	2,500

Table 1. Examples of KPIs with hypothetical data

Conventional Approach: Statistical Configuration

Placement of ambulances are traditionally premised on statistical configuration; specifically, a comparison of Key Performance Indicators (KPIs) based on aggregated statistics. Examples of KPIs are reflected in Table 1.

The top five regions highlighted under each KPI receive additional resources to aid in their operations. In other words, regions with relatively higher number of incidents and/or poorer operational response are prioritised.

Developing statistical configuration with this method is inferior as it does not consider the temporal nature of the incidents. It solely utilises traditional statistics to aggregate characteristics such as demand and performance; thus, the need to assign additional resources to a station receiving multiple concurrent incidents is overlooked. Additionally, this approach assumes that each base station has the respective capabilities to attend to the incident, and only serves its administrative boundary (B_{admin}). The B_{admin} is a static boundary that the station exercises administrative control over in terms of maintaining the resources within, via hydrant checks and operational surveys. However, the furthest geographical reach of an ambulance for a timely response within 11 minutes (B_{11min}) is more critical during operations. Figure 1 shows the conceptual difference between the two boundaries and the inadequacies of the conventional approach.

The B_{11min} of a station varies with the changes in environmental factors, such as traffic conditions. Based on statistical configuration, the station will deploy its ambulance when Incident A occurs within its B_{admin} during the peak hour. However, it will not reach within 11 minutes since the incident location falls outside its B_{11min} at peak hour. Conversely, B_{11min} will widen during the non-peak period due to lesser

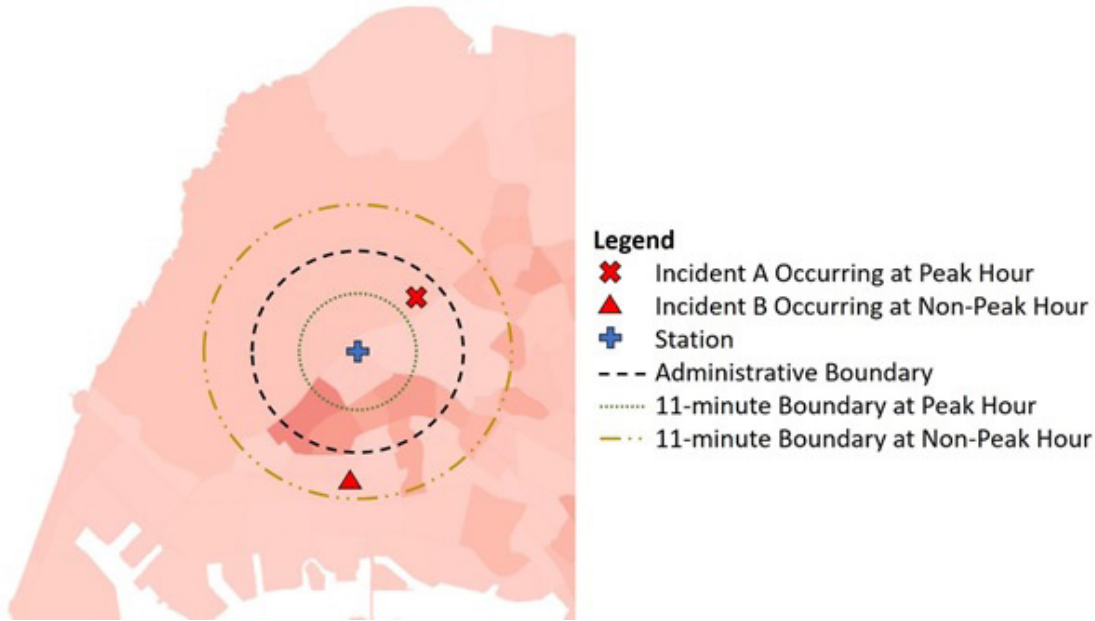

Figure 1. Schematic of the Conventional Approach

traffic. This increase in coverage will allow the station to respond promptly to Incident B despite it being located outside of its B_{admin}. Statistical configuration would not have considered the changes in B_{11min}, and that other stations could be activated instead. These issues reflect the inadaptability of the conventional approach to address these variables.

In a nutshell, traditional configurations focus on static allocation without addressing the interaction of time and space. Consequently, resources are not optimised for operational efficiency.

DATA ANALYTICS AS A STRATEGIC ENABLER: DYNAMIC RESOURCE OPTIMISATION (DRO)

As the adoption of data analytics proliferates, the benefits have become apparent. Improved organisational reporting, advanced visualisation dashboards, and data warehousing are among the top applications arising from advancements in data analytics. Instead of relying on intuition which may be subjected to cognitive biases, insights extracted from data can enhance decision-making and dramatically improve the formulation of policies and practices.

In collaboration with Singapore Management University (SMU) and Home Team Science & Technology Agency (HTX), SCDF developed the Dynamic Resource Optimisation (DRO) system to address the fundamental issue of ambulance placement. SCDF tapped on advanced data analytics and optimisation techniques to process the deployment of scarce resources, and minimise the overall response time across different time periods and locations from a systemic perspective. In designing the DRO system, resource availability for subsequent incidents is also considered – leading to a virtuous cycle of improved operational effectiveness.

Methodology

The development of the DRO is anchored on the following key functions:

a) Prediction, which involves the use of machine learning techniques (i.e., deep learning) to predict the response time using factors such as time of the day, day of the week, latitude, and longitude. Optimisation and simulation require the output from prediction.

b) Optimisation, which starts by shortlisting all valid configurations of virtually deployed ambulances that satisfy the several constraints laid down by the developer. The constraints (e.g., all incidents must be assigned to the nearest ambulance at base) are formulated as mathematical equations;

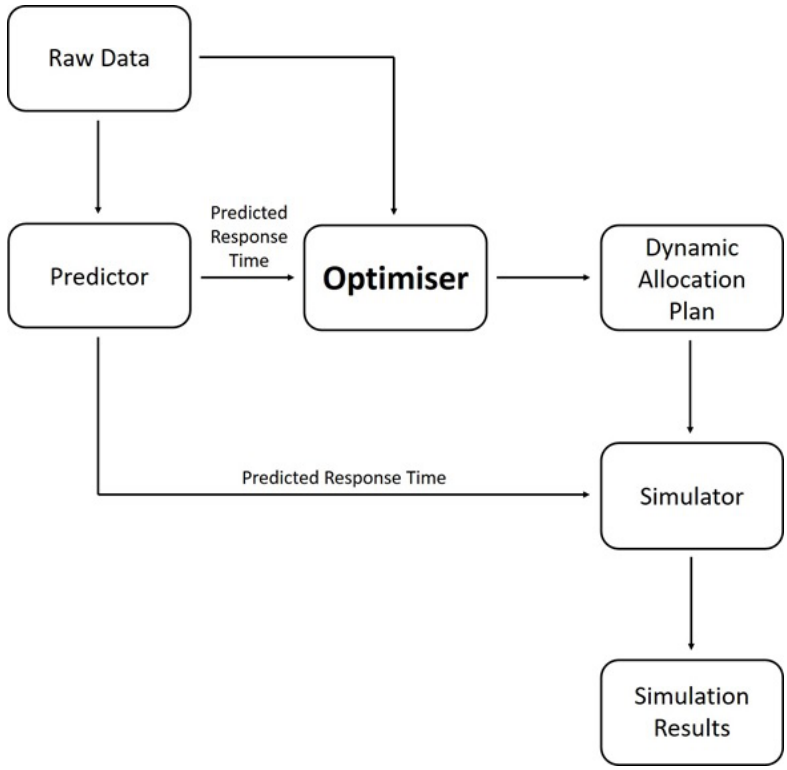

Figure 2. Schematic of the DRO System Workflow

the system then recommends the configuration with minimum overall response time.

c) Simulation, which serves to provide a virtual representation of EMS demand and ambulance placement data. It allows humans to interact with the machine to obtain answers to related issues.

Figure 2 illustrates the schematic of the DRO system, adapted from the project report by SMU titled "SCDF: Dynamic Resource Allocation for Ambulances" (SMU, 2017). The diagram seeks to present the steps taken to achieve the eventual output in the form of a deployment plan.

The objective of the DRO is to generate an ideal allocation plan by maximising the performance metrics using the Optimiser tool. Equation (1) depicts the types of input and the desired output (SMU, 2017).

Inputs such as the number of ambulances and stations, as well as the location of the incidents, are fed into a mixed-integer linear program to be solved by the Optimiser via minimisation of response time. These inputs serve to predict the response time as a pre-requisite for the optimisation process. Various constraints such as the dispatch policy (i.e., the

$$Allocation\ plan = \frac{d}{d(time)}(fleet\ size\ of\ appliances,\ set\ of\ stations,\ set\ of\ nearby\ stations\ for\ each\ incident\ \&\ their\ corresponding\ predicted\ response\ time\ round\ trip\ time \quad (1)$$

deployment of the nearest idle ambulance) are also introduced to produce a more holistic outcome. The final output of the Optimiser is an optimised configuration consisting of the deployment of the entire ambulance fleet and the predicted performance (SMU, 2017).

In addition, the DRO offers simulation capability. On the occasions where SCDF is not able to adopt optimised configuration thoroughly due to practical limitations, the simulation algorithm allows the testing of various scenarios that deviate from the optimised configuration. The user can use the results to decide and implement the configuration that best meets the constraints and has the most negligible adverse impact on the performance. The simulation works by taking a set of incident requests from the dataset and feeding it to both statistical configuration and optimised configuration (Varakantham, 2021). The Simulator handles all the incoming calls on a first-come-first-serve basis.

Under the conventional approach, the nearest (distance) available ambulance will be dispatched to the incident when a call is received. While under optimised configuration, the Predictor will first estimate the travel time between the incident site and stations. The algorithm then deploys the ambulance with the shortest response time. The simulated results generated from both plans are compared and discussed in the next section.

Results

Prior to the full implementation of the platform, the DRO system was trained using SCDF's historical data over a one-year period to reduce the potential seasonality effects. The system was also updated annually with inputs on recent data. This measure ensures that the platform continues to deliver reliable results.

SCDF has traditionally depended on human judgment based on statistical configuration to decide on ambulance placement. In evaluating the performance of the DRO system against the conventional approach, both statistical configuration and optimised configuration were subjected to simulation to ascertain the configuration that generates a better overall response time. Each configuration describes how many ambulances are deployed to each station. The performance metrics studied are (1) the response time of the 80th percentile; and (2) the percentage of timely response (SMU, 2017).

Table 2 outlines the simulation results on the difference between the two metrics across statistical configuration and optimised configuration. The

	Difference in Response Time of 80th Percentile (min)	Difference in Percentage of Timely Response (%)
Monday	0.9	3.8
Tuesday	0.9	4.6
Wednesday	0.8	3.8
Thursday	0.8	4.6
Friday	0.8	3.9
Saturday	0.7	3.7
Sunday	0.8	2.5
Overall	**0.8**	**3.7**

Table 2. Simulated differences between Statistical Configuration and Optimised Configuration

$$Difference\ in\ 80^{th}\ percentile\ response\ time = R_{SC} - R_{OC} \quad (2)$$

$$Difference\ in\ percentage\ of\ timely\ response = T_{OC} - T_{SC} \quad (3)$$

computations are derived using equations (2) and (3). *R* refers to the response time, while *T* denotes the timely response percentage. The subscript SC signifies statistical configuration, while the subscript OC represents optimised configuration.

Discussion

SCDF has seen an improvement in response time and operational efficiency with the implementation of the DRO system. As observed in Table 2, an ambulance in the 80th percentile will experience an average reduction in response time by 0.8 min, or 48s (minimum reduction 42s, maximum reduction 55s). Correspondingly, the timely response percentage increases. The operational efficiency is estimated to rise by an average of 3.7% (minimum improvement 2.5%, maximum improvement 4.6%). Due to these enhancements, SCDF can respond with timeliness to approximately 7,000 more calls per year.

Nonetheless, the comparison cannot be evaluated under real-world conditions. Many factors influence the performance, and real-time incident patterns cannot be duplicated to produce an unbiased test. Simulation provides an experimentation environment with the deployment configuration as the only variable; such controlled results reflect more accurately the impact of the tested variable on operational efficiency. The above simulation concludes that given identical operating conditions, the DRO system does optimise ambulance deployment much better than the conventional method.

Current Applications

The DRO system supports SCDF's operations in three important ways:

a) **Recommending the placement of new ambulances.** SCDF has implemented the DRO since 2017 to support the expansion of the ambulance fleet. The DRO system proposes the ideal locations to place additional ambulances in order to maintain a strong performance in response time. Over the last few years, SCDF's performance for EMS incidents has improved from 88.9% in 2017 to 91.8% in 2019 (before COVID-19).

b) **Recommending new locations to support dynamic deployment.** The DRO has been used to assess suitable public locations for new bases to close current performance gaps. In 2018, dynamic deployment was implemented to support potential demand hotspots during peak hours; a trial showed that these new locations improved EMS performance by 5.6%.

c) **Allowing simulation of performance for comparing alternative deployment configurations.** In some instances due to operational limitations, SCDF might not be able to adhere to the optimal allocation of resources as recommended by the system. DRO permits the users to test and simulate multiple "what-if" scenarios; this allows users to analyse the results, and execute an alternative deployment configuration with the most negligible impact on performance.

CONCLUSION

SCDF has made significant progress in employing data analytics and optimisation techniques to enhance its operational efficiency and effectiveness. Specifically, DRO recommends the optimal placement of ambulances through the minimisation of response time. The performance of the platform is evaluated via the simulation of incident demand and supply data, and the results have demonstrated positively a reduction in average response time and an increase in the average percentage of timely response.

Institutionalising data-driven decision-making capabilities has certainly helped SCDF in its forward planning, particularly in determining when and how many ambulances to acquire, as well as the best locations to place them to achieve the KPIs. In the long run, the database will also be able to contribute actionable insights as SCDF prepares for its next phase of logistics and infrastructure requirements to support its fleet expansion plans.

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Khoo Zhong Xun
joined SCDF in 2021 as a Development Officer (Analytics Management) in the Data Transformation Branch of the Transformation and Future Technology Department. His interests lie in research and analysing information to generate useful insights to bridge existing gaps. To gain the competencies required, he is pursuing a Doctor of Philosophy (Ph.D.) degree at Nanyang Technological University, Singapore. His research work addresses the limitations in additive manufacturing (Selective Laser Melting) of nickel titanium shape memory alloy. He had also written and published several research articles, review papers and conference papers. His current projects in SCDF include Inventory Management, a predictive model to forecast reorder quantity and minimum inventory level to minimise the probability of shortage and overstocking; and Anomaly Detection Dashboard, utilising historical data and mathematics to develop a real-time dashboard that prompts immediate action upon detection of anomalies.

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STRENGTHENING CORRECTIONAL REHABILITATION PRACTICES THROUGH EVALUATION

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ABSTRACT

As the Singapore Prison Service (SPS) expands its capabilities and efforts in offender rehabilitation, evaluation has become an integral part of the process to ensure the success of evidence-informed practices within the Department. Reviewing the design and implementation of correctional interventions, or process evaluation, is increasingly important to provide timely feedback to encourage improvement and optimise the use of resources invested in rehabilitation interventions. Drawing from research and its own experience in evaluation and implementation, SPS conceptualised the Intervention Design and Evaluation Cycle (IDEC) and Effective Practices and Sustainable Adoption (EPSA) to guide process evaluation systematically. This article describes how SPS approaches process evaluation through the application of the IDEC and EPSA, and ensures rigour and timeliness in its conduct of evaluations to offer credible and useful insights to strengthen correctional practices.

IMPORTANCE OF EVALUATION

Over the years, the Singapore Prison Service (SPS) has progressed to become a leading correctional agency globally by expanding its capabilities and efforts in offender rehabilitation. In the past, SPS primarily focused on the safe and secure custody of inmates. Although SPS maintained a clean record of zero escape, the two-year recidivism rate was high at 44.4 percent for the 1998 release cohort (Leong, 2014). To further contribute to a safer society, a new vision was conceived in 2000 with SPS officers serving as Captains of Lives to rehabilitate and reintegrate offenders. This set the motion for SPS to improve its capabilities in rehabilitation over time. Today, a wide array of rehabilitation programmes for offenders has been developed which includes psychology-based correctional programmes, vocational skills programmes, religious counselling as well as motivational, family-based, and befriending programmes. Eligible offenders are also allowed to serve the tail-end of their sentence in the community and receive professional support such as case management and employment assistance to help them reintegrate into the community (Singapore Prison Service (SPS), 2021).

Key to SPS's transformation is the commitment towards developing and applying evidence-informed practices. Evidence-informed practice is the use of best available empirical evidence to govern the techniques and approaches used by SPS to carry out its correctional goals. It involves a rigorous process of understanding "what works" in corrections, adapting and implementing best practices to the local context, and generating local evidence of effectiveness. Evaluation plays an integral part in this process. It does not only answer the question of whether a programme is working, it adds much value in providing information on how well the programme is implemented, helping stakeholders understand what is working and not working well to facilitate necessary and continuous improvements for better performance.

SPS's evaluation journey started in 2005 to review the effectiveness of rehabilitation programmes, regimes, and policies. Two main types of evaluation, process and outcome, are conducted and regarded with equal importance. Process evaluation focuses on examining the quality of

programme implementation to determine whether the programme activities are carried out as planned, integrated well into the practice settings, and are in line with industry standards. Outcome evaluation, on the other hand, investigates whether programmes are effective in achieving their intended aims.

This article focuses on the use of process evaluation to strengthen the implementation of evidence-informed interventions within SPS. The article begins by highlighting the importance of studying implementation and introduces an implementation framework, Effective Practices and Sustainable Adoption (EPSA), developed in-house to guide implementation efforts and evaluation. It then illustrates how, informed by the EPSA framework, evaluation is conducted and used in the SPS's Intervention Design and Evaluation Cycle (IDEC) to inform and strengthen correctional rehabilitation interventions.

IMPLEMENTATION MATTERS

The importance of high-quality implementation of rehabilitation programmes cannot be overstated. Evidence-informed programmes that are implemented well are more likely to achieve their desired outcomes such as reduced recidivism. Correctional research shows that when programmes are implemented competently and with fidelity, they can reduce the rate of re-offending by up to over 30 percent (Barnoski, 2004; Landenberger & Lipsey, 2005). Conversely, programmes poorly implemented may make offenders worse than not receiving any service at all (Barnoski, 2004). Such underperforming efforts are not only costly, but are also missed opportunities to help the offenders in need and improve public safety.

In recent years, correctional efforts within the Singapore prison system have grown in scale and complexity to create more transformational rehabilitative environments, evidence-informed programmes, and policies to support long-term offender change. For example, there are two mandatory schemes that aim to provide in-care rehabilitation programmes and positive social environment for offenders to ignite the change process, and scaffolding support in the aftercare for a smoother transition and reintegration into the community:

- The Mandatory Aftercare Scheme is a structured aftercare regime that provides enhanced community support, counselling, and case management with tight supervision; it is provided for a selected group of ex-offenders at risk of re-offending and those who need more support in reintegration into society.

- The Enhanced Drug Rehabilitation Regime offers a comprehensive range of in-care and aftercare interventions to help drug abusers with their drug issues and reintegration into the society.

The need to support and ensure high-quality implementation is of paramount concern to facilitate positive rehabilitation outcomes and prevent reoffending. Process evaluation is an invaluable way to inform stakeholders of the implementation progress and identify areas for enhancements, allowing for continuous improvement and better outcomes.

Characteristics of Quality Implementation

Despite best intentions, the transfer of research and evidence to applied settings is not straightforward and is always challenging (Goggin & Gendreau, 2006; Rhine et al, 2006). In the real-world environment, programme implementation is often influenced by several dynamic factors such as the socio-political context, organisational culture, and personal factors (e.g. staff attitudes and competencies).

To evaluate and inform programme implementation systematically, SPS referred to research in implementation science to understand the critical factors that influence effective implementation. Implementation science is the scientific study of methods to promote the systematic uptake of evidence into organisational routine practices (Bauer, Damschroder, Hagedorn, Smooth, & Kilbourne, 2015). Drawing from implementation research and its own implementation experiences, SPS conceptualised a theoretical framework, Effective Practices and Sustainable Adoption (EPSA), in 2019 to identify the characteristics of evidence-informed practices that are well-implemented and sustained over time. In Figure 1, the EPSA framework highlights five characteristics of effective and sustainable practices: sound design, leadership support, systems fidelity, staff commitment and implementation fidelity (see box for a brief outline of each of the five characteristics). The outer wheel

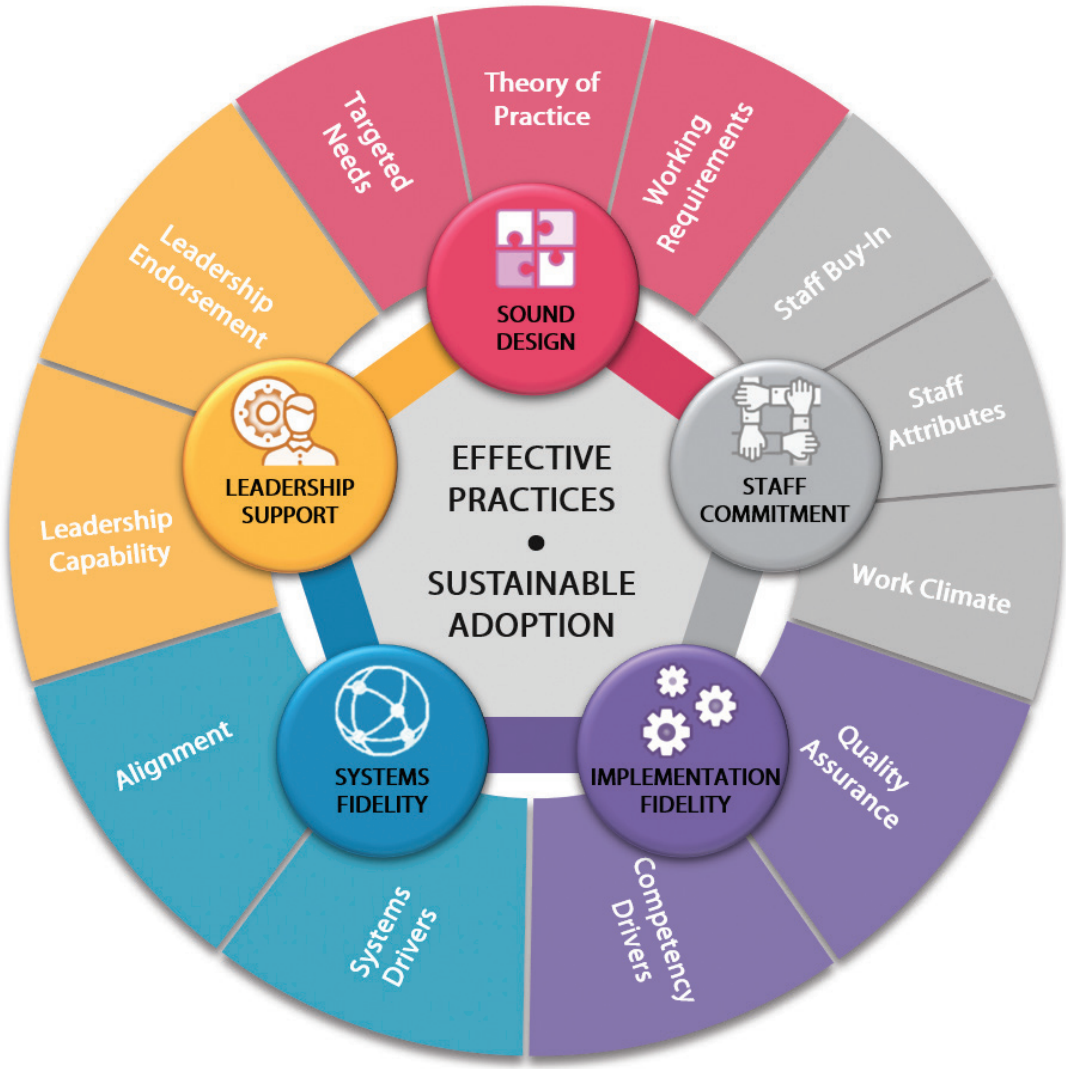

Figure 1. Effective Practices and Sustainable Adoption (EPSA) Framework

identifies 12 prerequisite elements that lead to the characteristics. The EPSA framework serves as a guide to focus the evaluation of programme implementation in areas that are crucial to the success of an evidence-informed programme.

EVALUATION IN ACTION

Evaluation is most useful when it seeks the right feedback at the right time. The SPS's Intervention Design and Evaluation Cycle (IDEC; Kaur et al., 2017) is its first attempt to illustrate the iterative nature of using process and outcome evaluations to inform intervention design and revision at different phases (see Figure 2). It can be applied in the design and evaluation of programmes or rehabilitation regimes for specific offending populations (e.g., drug, penal or female population).

For the development of new programmes, the cycle almost always begins at the needs analysis stage, and undergoes a period of refinement from an initial pilot evaluation before proceeding through the subsequent stages. However, more mature programmes may undergo multiple rounds of re-design and re-evaluation to adapt to significant changes in the political, legal, or social landscape. For instance, the original Integrated Criminogenic

Five Characteristics of Successful Practices

Sound Design highlights the importance of designing a programme that is evidence-informed and responsive to the needs of the target population. The programme needs to be able to articulate how it can be expected to bring about the desired outcomes. Practical considerations of what the programme requires to run smoothly (e.g. infrastructure, time, resources, and skills level) also need to be factored in the planning of its design.

Leadership Support is recognised as a critical force in influencing the sustained delivery of evidence-informed programmes, shaping staff attitudes, and promoting a positive implementation climate. Correctional agencies that are more successful in adopting evidence-informed practices tend to have leaders who value rehabilitation, understand behavioural change, and are up to date with existing evidence. They can then exert influence to establish policies, priorities, monitoring systems and feedback mechanisms, as well as foster staff commitment to promote implementation and improvements (Friedmann, Taxman & Henderson, 2007).

Systems Fidelity requires the consideration of internal organisational and external environmental factors to support the adoption of the programme. Systems drivers such as policies, processes and data systems may have to be adapted or established to integrate the programme activities into daily work routine. Communication channels should also be available to disseminate information and gather ongoing feedback for improvements. A programme that is aligned with the organisational goals and culture, as well as serves the concerns of the larger socio-political context, is more likely to be accepted and implemented with fidelity.

Staff Commitment takes into account the people part of the equation. It entails having buy-in from staff who believe in the programme approach and deem it as relevant and compatible with their work practices. Staff attributes such as values and skills set need to be matched with the complexity of the programme. Having a supportive climate that sustains motivation and encourages open communication, learning and teamwork is important to support the continued delivery of the programme.

Implementation Fidelity refers to the extent the programme is delivered as intended and is most assessed in process evaluations. Competency drivers and quality assurance mechanisms are essential to support implementation fidelity. Competency drivers refer to staff selection, training and coaching in the delivery of the programme (Metz & Bartley, 2012). Quality assurance mechanisms are the monitoring and assessment processes set up to review the performance of staff and the programme.

Programme (ICP), one of the first multi-criminogenic, psychology-based programmes developed by SPS in 2012, has undergone many cycles over the years. In 2016, ICP required immediate re-design to meet the high demand for the intervention in view of limited resources. In 2018, a changing offender profile and the evaluation results spurred the review of the programme again.

There are two phases of evaluation to inform programme performance at different stages of the intervention development. Phase 1 involves the conduct of process evaluation to facilitate effective delivery of intervention efforts, allows for timely mid-course corrections and improvements before outcomes are evaluated. Following the initial implementation and process evaluation, the intervention will usually undergo a transitional period of changes and full implementation before proceeding to Phase 2 on outcome evaluation.

Evaluation of Rehabilitation Regimes in the Intervention Cycle

This section describes the application of the phased approach and the general methodology employed in the evaluation of specialised rehabilitation regimes in SPS. These regimes are multicomponent rehabilitation initiatives that aim to provide a comprehensive rehabilitative experience for offenders and involve the redesign of various elements related to people, processes, programmes, and physical place. Specifically, these regimes undergo extensive changes in rehabilitation policies,

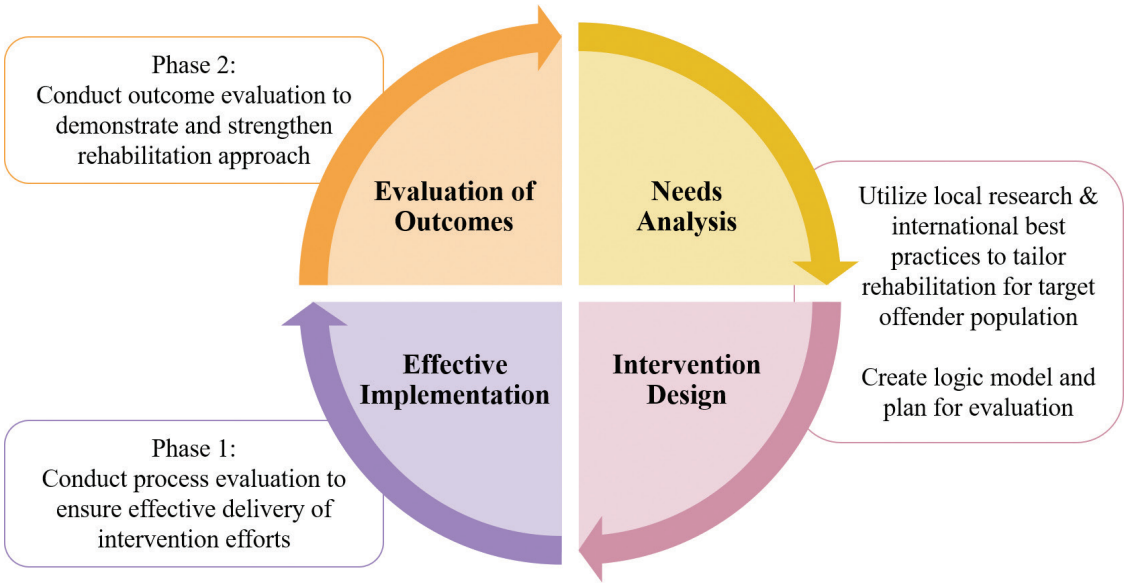

Figure 2: SPS's Intervention Design and Evaluation Cycle

manpower allocation, organisational processes, programming, and staff practices to create a holistic correctional environment for the offenders throughout their period of incarceration and post-incarceration community supervision under SPS. For instance, uniformed officers are trained to take on more rehabilitation roles and actively engage with offenders to support their change. The social environment within the institution is also transformed by instilling a cohort system among offenders to encourage communal living and foster a culture of mutual peer support. In view of the substantial investment in these regimes, evaluation is conducted to examine their performance for improvement and accountability purposes.

Phase 1: Conduct Process Evaluation

This phase represents the initial or early implementation period of the regime and is often characterised by instability. Given the complexity and scale of a new regime, it will meet with several implementation issues, for instance, inconsistent delivery of activities, unfamiliarity with new processes, and poor integration with existing work practices. Regime activities are also going through ongoing adaptations and changes as staff trial them in practice. Process evaluation is therefore emphasised at this stage: it systematically documents how the regime is implemented, and identifies successes and challenges to inform timely improvements, and guides the regime to a steady state. Pre-post testing of a small set of outcome areas (e.g. shifts in criminal attitudes) may be conducted concurrently to provide preliminary evidence of effectiveness.

The questions commonly addressed by process evaluation for new regimes are the following:

a. How well are the regime activities implemented, i.e. are they implemented as planned and to what extent do they adhere to evidence-based practices?
b. How well do the offenders respond to the regime activities?
c. What are the factors that enable or hinder quality implementation?

Upon consultation with stakeholders, both quantitative and qualitative data are collected and used to answer these questions and form a comprehensive assessment of the regime implementation.

a. How well are regime activities implemented?

As highlighted in the EPSA framework, the success of an intervention begins with a sound design that is backed by research and evidence. In 2014,

SPS adopted the evidence-based programme assessment tool, the Correctional Programme Checklist (CPC), that is developed and validated by the University of Cincinnati Corrections Institute to review regime design and its implementation (Lowenkamp & Latessa, 2002, 2005a, 2005b). The CPC introduces a structured and standardised assessment protocol to determine how closely the regime activities adhere to effective practices in changing offender behaviours. Specifically, two areas are examined: whether the regime has the capability to deliver evidence-based practices for offenders consistently; and whether the regime provides assessments and interventions that meet the principles of risk, needs and responsivity[1]. The assessment process consists of a series of site observations, document reviews and semi-structured interviews with key appointment holders, line staff and offenders. Based on the information gathered, the regime is scored on the CPC, deriving a comprehensive report of how well the regime is meeting the best practices in reducing recidivism with recommendations for improvement.

Implementation of key processes and activities is further monitored through existing data tracking, observations, interviews, and stakeholder meetings. This ensures that the regime activities are implemented as planned.

b. How well do the offenders respond to the regime activities?

Another important element contributing to a sound design is the receptivity of the offenders toward the intervention. It is important that the offenders perceive the regime activities as appropriate, relevant, and responsive to their needs, otherwise, it is unlikely that they would engage in the rehabilitation process to yield the desired outcomes. Feedback is collected from offenders through programme satisfaction forms, semi-structured interviews and focus groups at milestone stages of the regime (e.g., at the end of institutional stay and after a period in community supervision).

c. What are the factors that enable or hinder quality implementation?

Apart from sound design, the EPSA framework pinpoints the critical aspects of implementation to be studied. Leadership support, staff commitment and alignment of new initiatives with the existing system are particularly important for the successful inception of a new regime. Implementation research offers a variety of models and instruments to facilitate a deeper assessment in these areas. One such tool applied in the regime evaluations is the Texas Christian University Organizational Readiness for Change (TCU-ORC; Lehman, Greener & Simpson, 2002) that offers tailored versions for both leaders and staff. The survey focuses on measuring the personal attributes of leaders or staff (e.g. "You are effective and confident in doing your job."), institutional resources ("Frequent staff turnover is a problem for this programme."), programme management ("Much time and attention are given to staff supervision when needed."), and organisational climate (e.g. "Staff here all get along very well."). The organisational survey is helpful in providing a broad sensing of the preparedness of the implementing units toward adopting the new changes. Findings are triangulated with other process data gathered from observations and interviews to guide further discussions with stakeholders on the strengths and challenges faced during implementation. Additionally, the TCU-ORC may also be re-administered at later implementation stage to assess if organisational readiness has reached a higher functioning level to sustain the delivery of the regime.

Consolidation and Use of Findings

At the end of the process evaluation, the findings are synthesised from Phase 1 data collection to reflect how well the regime has established its practices as intended and highlight recommendations for mid-course corrections (see Table 1 for a sample of findings). Key stakeholders are engaged to discuss and generate specific follow-up plans. For example, the process evaluation of a regime led to the setup of a Systems Integration working team to champion

[1]The Risk, Needs, and Responsivity (RNR) model is a well-researched rehabilitation model that guides the assessment and treatment of offenders (Andrews & Bonta, 2006). The three core principles states that 1) offenders should be matched to suitable programmes according to their risk of reoffending (*Risk*), 2) offender programmes should focus on treating criminogenic needs (*Needs*), and 3) offender programmes should be based on cognitive social learning theory and be responsive to the offenders' learning needs such as learning style, motivation, abilities and strengths (*Responsivity*).

Strengths	Areas for Improvement
Regime Design • Offender assessment system is robust and matches offenders to appropriate level of services. • Structure and content of the psychology-based correctional programme are well-received by the offenders. *Staff Commitment* • Staff value offender rehabilitation and express confidence in carrying out their rehabilitation roles. • Offenders perceive high levels of support from staff.	*Implementation Fidelity* • Core correctional practices (i.e. structured skills building, effective reinforcements and punishments, etc.) need to be applied more regularly and consistently to enhance effectiveness. • Quality assurance mechanisms such as coaching and regular file reviews can be strengthened to ensure staff competency and consistency in delivering interventions across cohorts.

Table 1. Sample of Process Evaluation Findings

various enhancements in the regime interventions and processes. In another instance, to improve implementation fidelity, a specialised training package was developed and held over regular intervals to provide staff with ongoing training in specific skills to engage the target population more effectively. The coaching framework was also enhanced by providing live observations and feedback to ensure quality practice.

Phase 2: Conduct Outcome Evaluation

This phase represents steady-state implementation. Initial major design and implementation issues identified in the earlier stage would preferably have been addressed. The regime is ready for more rigorous testing of effectiveness for accountability purposes although it can inform further enhancements at the same time. Pre-post testing of offender attitudes and behavioural perceptions are conducted and where possible, quasi-experimental design is employed to compare intervention outcomes between the "treated" and a comparable "non-treated" group. The findings are then combined with available data, such as qualitative interviews with participants, to determine how the regime contributes to the observed outcomes.

It is worth noting that while the emphasis in this phase is on outcomes, process evaluation in the form of process monitoring continues to be relevant as regime implementation remains dynamic and open to contextual changes, for example, shifts in offender profile or policy direction. The types and quantities of services, as well as the profile of offenders who underwent the regime, should continue to be monitored to allow attribution of regime outcomes to the regime activities (Rossi, Lipsey & Freeman, 2004).

CONCLUSION

Evaluation plays a pivotal role in promoting the success of evidence-informed practices within SPS. Process evaluation in particular helps to improve quality of implementation, which in turn increases the chances of correctional efforts yielding its intended outcomes and impact. As correctional interventions become more sophisticated and complex, they present more implementation challenges and require time and effort to be implemented effectively. It is therefore important to conduct process evaluation early in their stages of implementation to assess the design, and understand the critical factors influencing implementation to provide timely feedback for improvements. There is also much value to draw on research in implementation science to deepen the practice of process evaluation in SPS.

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OUTRAGE (OF MODESTY) IN THE LION CITY

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ABSTRACT

Outrage of modesty or molestation offences has been a rising crime trend in Singapore with an average of 1,190 reported cases per year from 2016 to 2020. This is a 24% increase from the preceding five years (2011 to 2015). To study the factors contributing to the trend, the authors looked at a sample of 402 cases of outrage of modesty offences reported from 2017 to 2018. The study found significant associations between the victim-offender familial relationship and the victim's age; the time of offence and the victim's age; the modus operandi and the victim's age; and the modus operandi and the number of sexual behaviours. The theories surrounding these factors, the victimology and offender psychological characteristics as it pertains to the study findings, as well as the implications for crime prevention measures in the Singapore context are also discussed.

DEFINING OUTRAGE OF MODESTY

Outrage of Modesty (OM) is a term used in Singapore to refer to acts of molestation which are defined as involving uninvited touching, stroking, grabbing, or fondling of the victim without consent (Yap et al., 2002). OM has profound effects on victims, such as creating doubt in their sense of control, leading to their internalising that the world around them is dangerous (Kirchhoff et al., 2007). The forms of unwanted touching – groping, fondling, feeling up – represent sexual violence and the descriptions express the nullification of the victim's agency (Stefansen, 2019). These experiences are traumatic and painful for victims who struggle in the aftermath. As OM cases begin to rise, it is important to understand factors that affect or enhance crime prevention strategies.

Singapore's definition of OM is spelt out in Section 354 of the Penal Code which refers to the use of criminal force on any person with the intention to outrage, or knowledge that the actions will lead to outrage of modesty of that person (Singapore Statutes Online, n.d.). Acts such as kissing, touching of inappropriate areas, and even hugging constitute OM when there is no consent between parties involved. Aside from the legal definition, psychological research into behaviours like OM is an important consideration in defining the phenomenon. One such behaviour is frotteurism of which OM is a variant of (Lim et al., 2000). Frotteurism is a paraphilia or atypical sexual behaviour defined by persistent sexual arousal or fantasies derived from touching or rubbing one's groin against an unsuspecting and nonconsenting person (Ranger & Fedoroff, 2015). This is usually committed in public places and crowded areas where victims are approached from behind. As motives are hard to prove and can be explained as accidental touching, arrests are infrequent. Moreover, behaviours associated with OM in and of themselves are not offences and often take place within intimate relationships. Stefansen (2019) makes a clear distinction that these acts are offensive and represent sexual violence when no consent is given. This supplements the legal definition with the key concept of consent being an important factor in consideration. OM can thus be understood as unwanted sexual behaviours performed on a non-consenting person.

Prevalence Rate in Singapore

Singapore's OM prevalence rates have generally been increasing, from 1,282 reported cases in 2016 to 1,605 cases in 2019, before dipping to 1,320 cases in 2020 (Data.gov.sg, n.d.) due to fewer cases being recorded during the COVID-19 pandemic

"circuit breaker" (which restricted movements and gatherings) in April and May 2020. In the most recent Mid-Year Crime Statistics, OM cases saw an increase of 38.6% to 786 in the first half of 2021, up from 567 in the first half of 2020. This rising trend, coupled with the profound effects of OM on victims, suggests ongoing crime prevention efforts are not having the desired effect. Given OM's sexual nature, theories of sexual offending will first be considered to understand the processes involved in OM to devise more effective prevention strategies.

Theories of Sexual Offending

Theories of sexual offending serve as an avenue to conceptualise OM behaviour and consequently advise prevention efforts. Many of these theories are consolidated in a literature review by Faupel (2015) and are split into single factor and multifactor theories.

Single factor theories attempt to explain sexual offending by focusing on a singular factor. For instance, biological theories emphasise biological abnormalities in terms of the lack or presence of biological structures whilst personality theories focus on childhood trauma as responsible for sexual offending. Other single-factor theories include evolutionary, cognitive, and behavioural theories (Faupel, 2015).

Multifactor theories consider multiple factors and account for the interactions between them to explain sexual offending. An example is Marshall and Barbaree's (1990) Integrated Theory proposing that the prominent causal factors for sexual offending are developmental experiences, biological processes, cultural norms, and the psychological vulnerability that can result from a combination of these factors. Another multifactor theory is Hall and Hirschman's (1991) Quadripartite Model, which groups sex offender's traits into four factors they believe to be the most significant in the aetiology of sex offending: (1) sexual arousal, (2) thought processes, (3) emotional control, and (4) personality problems. The model proposes that although the four factors are important, one is generally more prominent in the individual sex offender.

On the other hand, the Integrated Theory of Sexual Offending (ITSO) argues that a comprehensive account of human behaviour requires consideration of at least four levels of analysis: (1) Aetiological, (2) Brain mechanism, (3) Neuropsychological and (4) Symptoms or phenomenological level of analysis (Ward & Beech, 2016). Four sets of factors converge to cause sexual offending and its associated problems: (1) Biological, (2) Ecological niche, (3) Neuropsychological and (4) Agency-level factors, which refer to those under a person's volition such as level of impulse. According to ITSO, sexual offending occurs through the ongoing confluence of distal and proximal variables that interact in a dynamic way.

Single factor and multifactor theories describe sexual offending as a result of varying dispositional and situational factors within or around the offender. Based on these theories, prevention involves addressing these factors to disrupt the processes leading to sexual offending. This involves carrying out pre-emptive intervention to stop potential OM offenders and addressing the factors and processes highlighted in these theories of sexual offending. To achieve this, constructing a profile of an OM offender is required for early identification.

DEFINING THE OM OFFENDER

Based on studies of sexual offenders and specifically OM offenders, their psychosocial variables and risk factors can be distilled to identify those likely to commit OM offences. A literature review of the characteristics of male sexual offenders by Greathouse et al. (2015) classifies factors into the following categories: childhood abuse, sexual behaviour, attitudes and cognitions, peer attitudes and behaviour, and substance use. Factors such as adverse childhood experiences, peer abuse, and pornography use are identified as psychosocial factors related to sexual offending. In general, these traits may be present in OM offenders which helps in identification work. To obtain a better understanding of OM offenders, studies specifically studying OM offenders were considered.

Differentiating OM Offenders

To begin, it would be helpful to consider any boundary conditions or traits between OM offenders and other offenders. A study of 62 OM offenders in Singapore found that their traits contrasted with the stereotypes of the criminal population (Lim et al., 2000). This sample of OM offenders remanded in state prison were found to be well educated and employed, and about

half were married. Additionally, a study of 60 rape and molest offenders in the United States found significant differences between rape and molest offenders in areas of offence history, brain functioning and psychological functioning (Young, Justice & Erdnerg, 2012). In brief, the study found that molest offenders had intellectual, neurological, and psychological functioning in the normal range as opposed to rape offenders. Furthermore, there were significant differences in offence histories, with rape offenders having a higher likelihood of having previously committed violent offences. The studies suggest the OM offender does not resemble the typical criminal stereotype. Instead, they are often gainfully employed, possess normal neurological functioning, and do not have severe offence histories.

Psychosocial Variables Associated with OM Offenders

A comparison of child molesters and a non-offender control group in Texas found that adult attachment anxiety, cognitive distortions regarding adult-child sex, and inconsistent empathetic attitudes together predict a substantial degree of variance in child molester status (Wood & Riggs, 2008). Hence, while OM offenders may differ from other sexual offenders such as rapists, they still possess some factors exhibited by other sexual offenders as cited in Greathouse et al. (2015). In terms of behavioural traits, research studies do converge on molest offenders' need for intimacy as a reason for their offending behaviour (Yap et al., 2002; Young, Justice & Erdberg, 2012). A comparison of a sample of 62 OM offenders and 50 randomly selected individuals convicted of theft in Changi Prison in Singapore had similar findings (Yap et al., 2002). While OM offenders were not socially inhibited or struggled with socialisation or establishing relationships, they found difficulty in establishing stable intimate relationships (Yap et al., 2002). Based on the same sample, OM offenders were also less likely to engage in sexual intercourse or to have used pornography three months prior to their offence (Lim et al., 2000). The study infers that OM offenders have an inability to form intimate and ongoing sexual relationships and look towards molesting behaviours as a maladaptive expression of these unfulfilled sexual desires (Lim et al., 2000). Similarly, the study by Young et al. (2012) proposed that molest is a function of an overwhelming yet inappropriate and immature expression of psychological attachment. These studies suggest OM offenders may offend to fulfil their sexual needs as they are unable to derive it from stable intimate relationships. Based on these studies, it would be theoretically possible to identify people at risk of carrying out OM offences and conduct pre-emptive correctional work on them.

Limitations of Dispositional Theories

The theories of crime discussed thus far can be described as offender propensity-oriented criminology (Eck & Clarke, 2019). These advise crime prevention through identifying offenders and correcting their dispositional traits. This work is useful in reducing recidivism of offenders who are in the custody of correctional settings because of their offences. While these theories are useful in providing a holistic picture of OM offenders, they are impractical in advising prevention efforts. This is because potential offenders are still at large and cannot be brought into correctional settings until they have offended. From a public safety context of preventing the offence in the first place, it would be more practical and useful to target situational factors of crime.

Situational Theories of Crime

Situational theories of crime are more useful in prevention as the focus is at the level of how crime is committed as opposed to why offenders offend (Eck & Clarke, 2019). This is based on the rationale that motivated offenders would not commit crime if their means of offence have been disrupted. This means prevention work can focus on manipulating the situational factors as opposed to changing the motivation of offenders to prevent OM offences.

The theory of rational choice posits that offenders weigh the potential benefits and consequences of crime (Cornish & Clarke, 1986). Crime occurs when the perceived benefits outweigh the perceived consequences for offenders. Consequently, this theory suggests that increasing the perceived consequences or decreasing the perceived benefits of committing an offence would prevent the occurrence of crime.

The theory of routine activities postulates crime to be a "function of the convergence of likely offenders and suitable targets in the absence

of suitable guardians" (Cohen & Felson, 1979, p. 590). These three factors of motivated offenders, suitable victims and the lack of guardianship are all necessary for crime to occur. Based on this theory, crime can be prevented by disrupting the convergence of all three factors. An application of the theory of routine activities can be gleaned from the strategies used to prevent burglary offences in a British city. As described by Poyner & Webb (1991), the strategies used involved improving surveillance at key break-in or escape points of the burglars. The surveillance acted as guardianship which disrupted the commission of crime. Situational prevention was carried out by intervening at the point of how burglars committed crime without needing to know the why. Even though the burglars may be motivated to steal, the presence of guardianship through the surveillance cameras disrupted the process of crime without needing to address their motivations. This is useful since it allows for dealing of the crime without having to intervene directly with potential offenders.

With sexual offending, there is empirical support for using situational theories (Brown, 2019; Smallbone & Wortley, 2000). By conceptualising OM in Singapore using situational theories of crime, the relevant situational factors can be identified and manipulated to impede the occurrence of OM. This can be achieved by identifying critical factors in the Singapore context.

RESEARCH PROBLEM

While situational theories of crime are the most promising and can provide practical prevention tips to reduce the opportunity to offend, their efficacy and relevance in explaining OM in the Singapore context has not been extensively researched. With varying situational factors involved in each OM offence, it is imperative to study how these factors relate to one another. Appropriate interventions can then be explored to reduce the rates of local OM. This study aims to bridge the gap by answering the following research question: *How do situational factors of crime affect OM offences in Singapore*?

Critical Situational Factors

Relationship between Offender and Victim and Victim's Age

Research suggests that younger victims are often victims of intrafamilial members while older victims are victims of extrafamilial members (Fischer & McDonald, 1998; Smallbone, Marshall & Wortley, 2013). This is supported by a study in the US which found that 49% of the offenders of younger victims, who were under the age of 6, were family members (Snyder, 2000). This was compared to the 12% of offenders who were family members of adult victims (Snyder, 2000). The difference is attributed to the difference in routine activities of younger victims and older victims. While younger victims spend more time at home under the supervision of familial members, older victims are given more independence and meet more strangers (McKillop et al., 2015). Thus, sexual crimes against victims are often based on who they meet which is consequently shaped by their age-related routines. Younger victims spend more time with intrafamilial members and non-strangers. Older victims spend more time with extrafamilial members and strangers. Based on this, the following hypotheses are proposed:

Hypothesis 1: The relationship between offender and victim (intrafamilial vs. extrafamilial) is significantly associated with the victim's age.

Hypothesis 2: The relationship between offender and victim (stranger vs. non-stranger) is significantly associated with the victim's age.

Time of Offence and Victim's Age

Research findings indicate that offenders may favour different timings in targeting victims of different ages. Younger victims who spend more time at home under a caregiver's guidance were found to be severely molested in the afternoon (Leclerc et al., 2015). This implies that afternoon hours are deemed safer for offending. Considering the routine activities at home, the afternoon is when other family members are at work or school. The lack of perceived guardianship then may therefore account for the higher OM offences in the afternoons. On the other hand, offenders targeting victims in public tend to regard daytime as a riskier environment (Beauregard & Leclerc, 2007). This could be because most people are still carrying out their routine activities in public, leading to more populated streets. Thus, unlike for younger victims at home, daytime represents a time where guardianship is perceived to be high. These victims may be more likely to be targeted at night where guardianship is perceived to be lower.

Additionally, it is likely that a larger proportion of victims targeted in public are older victims. This is because younger victims often spend time at home and rarely encounter strangers alone in public (Fischer & McDonald, 1998). Therefore, given the difference in routine activities of younger and older victims, the timings where they would have a lack of guardianship would differ. Hence, the victim's age should be associated with the time of offence. Based on this, the following hypothesis is proposed:

Hypothesis 3: The time of offence is significantly associated with the victim's age.

Modus Operandi and Victim's Age

In sexual offences, perpetrators were found to employ different strategies based on the victim's age (Kaufman, Hilliker & Daleiden, 1996; Leclerc, Carpentier & Proulx, 2006). This is likely because of the power difference between a young victim and an older victim. Two different strategies and approach techniques or Modus Operandi (MO) have been identified.

The first MO takes place within residences and often involves a process of gaining a right of access, grooming and eventually leading up to the sexual abuse (Cornish, 1998). This MO involves a prior relationship and interaction between perpetrator and victim and is referred to as "Contact" MO. Grooming, often part of child sexual abuse offences, refers to the preparatory work of the offender in building trust and rapport with the victim (McAlinden, 2006). Methods for victims aged 0-9 years old include using gifts and giving attention (Leclerc et al., 2006). This eventually tapers off as the victim grows older into adolescence (Leclerc et al., 2006). The rationale of tapering off with older victims could be a result of their increasing maturity. Offenders attempt to manipulate victims through desensitising victims and instilling shame or guilt to coerce them (Bennett, & O'Donohue, 2014). Younger victims who are more dependent and struggle to discern for themselves would be more susceptible to such a MO than older victims. In contrast, older victims are likely more susceptible to another MO.

The second MO bears similarities with frotteurism which involves a more hit-and-run approach with victims being approached by strangers from behind (Ranger & Fedoroff, 2015). Due to the routine activities of older victims, they are given more independence and can spend unsupervised time outside the home for longer periods of time (McKillop et al., 2015). This leaves them more susceptible to "Surprise" MO at locations such as shopping malls or in public transportation. While younger victims are also susceptible to "Surprise" MO, they are often in the supervision of familial members or teachers in after school recreational activities when outdoors (McKillop et al., 2015). The adult supervision would leave them less susceptible to "Surprise" MO compared to older victims who are more likely to be alone. The victims' age should thus be associated with the MO used by the offenders and the following hypothesis is proposed:

Hypothesis 4: The Modus Operandi used is significantly associated with the victim's age.

Modus Operandi and Number of Sexual Behaviours

The type of MO used influences the number of sexual behaviours performed. (Sexual behaviours refer to any of the following associated with the sexual assault offence: attempted penetration, digit penetration, fellatio, flashing, hugging, kissing victim's body, kissing victim's lips, lifting or pulling victim's clothes, masturbation, peeping, penetration, physical violence, taking off victim's clothes, touching breasts, touching buttocks, touching genitals, and touching victim's body.) For "Contact" offences, perpetrators often carry out a process known as grooming. In child sexual abuse research, this involves the physical and psychological desensitisation of the child to sexual advances through building rapport, gaining trust, and ensuring secrecy (Bennett & O'Donohue, 2014). Such offences, which likely span more than thirty minutes, often involve physical coercion on their victim (Balemba & Beauregard, 2012). Due to the time taken by these processes, perpetrators of "Contact" MO offences spend relatively more time with the victim than in "Surprise" MO offences. The increased amount of time and victim desensitisation could allow for more than one sexual behaviour against the victim. In contrast, "Surprise" offences take place extremely quickly and are often transient, involving touching the victim in public areas and crowded places (Ranger & Fedoroff, 2015). The brief, transient characteristics of "Surprise" offences relative to "Contact" offences allow time for only one sexual behaviour against the victim. Based on this, the following hypothesis is proposed:

Hypothesis 5: The Modus Operandi is significantly associated with the number of sexual behaviours.

Method

Participants

Archival demographic data of offenders and victims involved in OM cases from January 2017 to December 2018 were obtained. From a total of 1,614 Statement of Facts (SOFs) filed between January to December 2017, 201 were randomly selected for further analysis. A further 201 SOFs were randomly selected from the 1,823 SOFs filed between January to December 2018. This made for a total of 402 SOFs. The offenders comprised 400 (99%) males and 2 (1%) females with an age range of 7 to 87 years (M = 39.60, SD = 17.39). The victims comprised 37 (9.20%) males and 365 (90.80%) females with an age range of 2 to 86 years (M = 24.82, SD = 12.05).

PROCEDURE

To enact effective prevention measures, critical situational factors were identified to understand OM in the local context. This was done through analysing the 402 SOFs and coding for measures such as age groups, time of offence, number of sexual behaviours, and modus operandi. To understand OM in the local context, chi-square test of independence was used to test for the significance of associations between factors. Through the test, the critical situational factors were identified to understand OM in the local context. The following section depicts how the measures were coded from the SOFs.

Results

Demographic Analysis

The analysis indicated offenders were mostly male, with an average age of 39 years old (M = 39.60, SD = 17.39), and working in a skilled occupation. This is in line with sexual offending research where the majority of perpetrators are males. Analysis also indicated that most offenders were under the influence of alcohol (89.1% of offenders in 2017 and 87.6% in 2018). Victims were mostly female, with an average age of 24 years old (M = 24.82, SD = 12.05), and working in a skilled occupation. This also corroborates with sexual offending research where most victims are female.

Offender Profile

Age. The offenders' age spread resemble a normal distribution as can be seen in Figure 1. Most offenders were from the 'Working Adults' age group as seen in Figure 2.

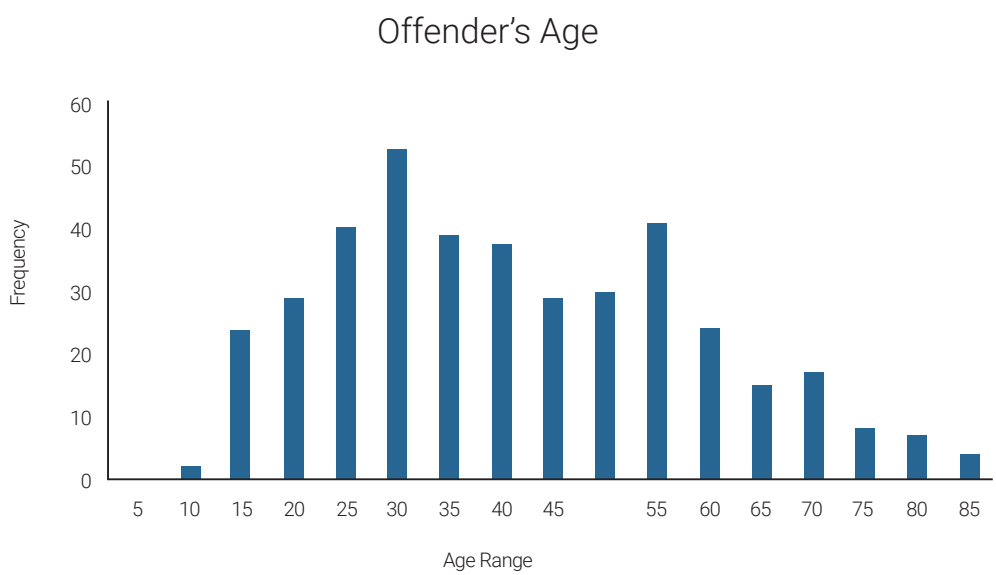

Figure 1: Distribution of Offenders Based on Age

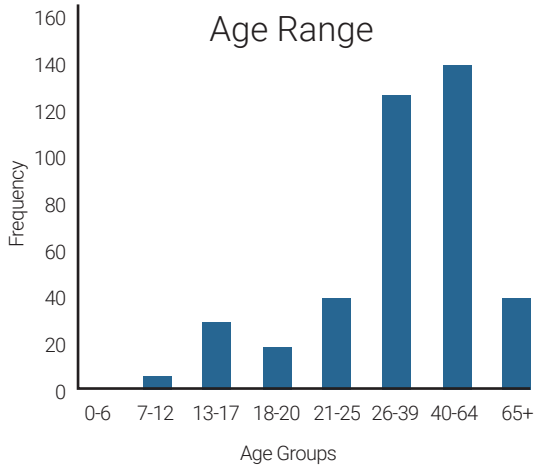

Figure 2: Distribution of Offenders Based on Age Groups

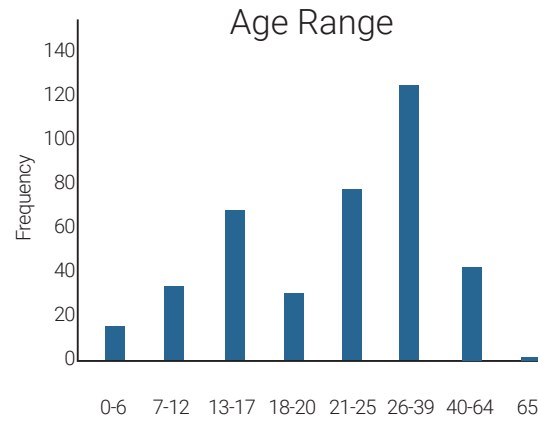

Figure 4: Distribution of Victims Based on Age Groups

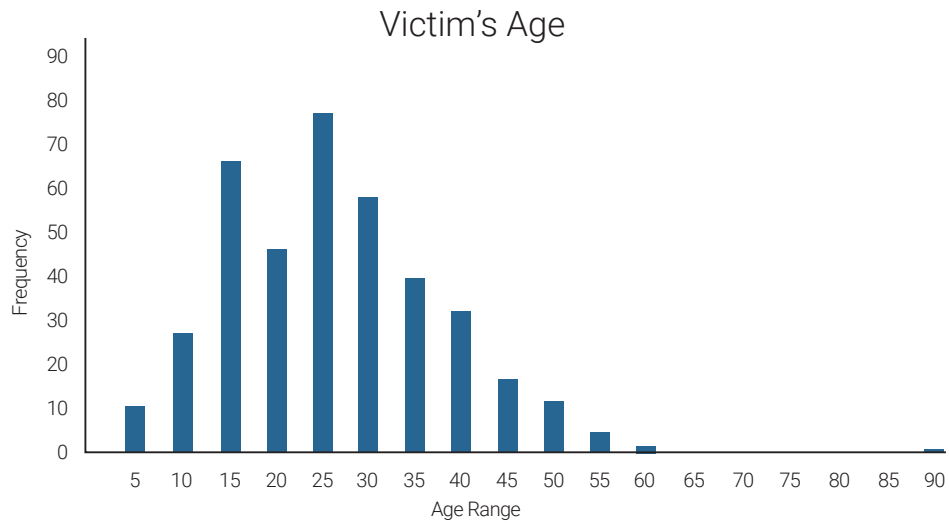

Figure 3: Distribution of Victims Based on Age

Occupation. 171 (42.54%) were skilled workers, 46 (11.44%) were students, 60 (14.93%) were unemployed and 114 (28.36%) were unskilled workers.

Past Offences. The SOFs were also analysed for past offences. They were classified as "similar" in terms of OM offences or "other" offenses such as rioting, rape and offences under Protection from Harassment Act (POHA). A total of 45 (11.19%) offenders had "similar" OM offences whilst 59 (14.68%) offenders had "other" offences.

Mental Health Records. 11 (2.74%) had existing mental health records. However, more specific information such as the type of mental illnesses were not captured in the dataset.

Influence of Alcohol and Drugs. The SOFs were also coded if the offenders and victims were under the influence of alcohol or drugs. For the offenders, 355 (88.31%) of them were under the influence of alcohol prior to offending while five (1.24%) were under the influence of drugs. For the victims, four (1.00%) were under the influence of alcohol during the crime.

Victim Profile

Age. The victims' age spread is moderately positively skewed, and they tend to be younger as seen in Figure 3. Most victims were from the "Working Adults" age group as seen in Figure 4.

Occupation. 116 (28.86%) were skilled workers, 130 (32.34%) were students, 50 (12.44%) were unemployed, 94 (23.38%) were unskilled.

Intoxication. Four (1.00%) victims were intoxicated during the crime.

Offence Details

Modus Operandi. 156 (38.81%) cases involved "Contact" offences whilst 227 (56.47%) cases involved "Surprise" offences.

Relationship (Intrafamilial vs. Extrafamilial). 34 (8.5%) cases involved intrafamilial members whilst 366 (91.5%) cases involved extrafamilial members.

Relationship (Stranger vs. Non-stranger). 205 (51.00%) cases involved strangers whilst 197 cases (49.00%) involved non-strangers.

Victim Selection. There were 308 (76.62%) cases whereby victim selection was present and 94 (23.38%) cases where victim selection was absent.

Number of Sexual Behaviours. 233 (57.96%) cases involved only one sexual behaviour whilst 158 (39.30%) cases involved the offender performing more than one sexual behaviour.

Time of Offence. There were 16 (3.98%) cases that took place in the "Early morning", 54 (13.43%) cases in the "Morning", 74 (18.41%) cases in the "Afternoon", 43 (10.70%) cases in the "Evening", 64 (15.92%) cases in the "Night", and 38 (9.45%) cases at "Midnight".

Quantitative Analysis of Different Associations

To derive a situational framework of OM in Singapore, chi-square analyses were carried out to investigate the associations between situational variables. The following are the results based on the SOFs.

Hypothesis 1: Relationship between Offender and Victim (Intrafamilial vs. Extrafamilial) and Victim's Age

There was sufficient evidence to reject the null hypothesis and infer that the relationship with the offender in terms of intrafamilial versus extrafamilial members was significantly associated with the victim's age (x^2 (7, N = 402) = 63.69, $p < .001$). Examining the results, the observed frequency of intrafamilial offenders of victims from 0-6, 7-12 and 13-17 age groups were higher than their expected frequencies. On the other hand, the observed frequency of extrafamilial offenders of victims from 18-20, 21-25 and 26-39 age groups were higher than their expected frequencies. These suggest that victims from younger age groups were likely to be violated by familial offenders whilst victims from older age groups were likely to be violated by extrafamilial offenders.

Hypothesis 2: Relationship between Offender and Victim (Stranger vs. Non-stranger) and Victim's Age

There was insufficient evidence to infer a significant association between stranger versus non-stranger and the victim's age (x^2 (7, N = 402) = 10.16, $p > .05$).

Hypothesis 3: Time of Offence and Victim's Age

There was sufficient evidence to reject the null hypothesis and infer that the time of offence is significantly associated with the victim's age (x^2 (35, N = 402) = 66.10, $p < .01$). Based on the findings, there were higher observed frequencies than expected frequencies in the afternoon for victims in the 0-6, 7-12 and 13-17 age groups. For older victims in the 21-25 and 26-39 age groups, there were higher observed frequencies at midnight. This was the case for the 26-39 age group as well in the evening and night. These suggest that younger victims from the 0-6 and 7-12 age groups were more likely to be violated in the afternoon while victims from the 13-17 age group were more likely to be violated both in the morning and afternoon. For victims from the 21-25 age group they were more likely to be violated at midnight while victims from the 26-39 age group were more likely to be violated in the evening, night and midnight.

Hypothesis 4: Modus Operandi and Victim's Age

There was sufficient evidence to reject the null hypothesis and infer that the MO is significantly associated with the victim's age (x^2 (7, N = 402) = 20.63, $p < .01$). Examining the data, victims in the 0-6, 7-12 and 13-17 age groups had more observed frequencies of "Contact" than expected frequencies whilst having less observed frequencies of "Surprise" than expected frequencies. For victims in the 21-25, 26-39 and 40-64 age groups, the opposite was true. These suggest that offenders targeting younger victims in the 0-6, 7-12 and 13-17 age groups are more likely to use "Contact" based MO whilst offenders targeting older victims in the 21-25, 26-39 and 40-64 age groups are more likely to use "Surprise" based MO.

Hypothesis 5: Modus Operandi and Number of Sexual Behaviors

There was sufficient evidence to reject the null hypothesis and infer a significant association between the MO used and the number of sexual behaviours committed (x^2 (1, N = 402) = 59.32, $p < .001$). Examining the data, "Contact" offences had more observed frequencies than expected frequencies of more than one sexual behaviour. On the other hand, "Surprise" offences had more observed frequencies than expected frequencies of only one sexual behaviour. These suggest that perpetrators who utilise "Contact" MOs are likely to perform more than one sexual behaviour while perpetrators who utilise "Surprise" MOs are likely to perform only one sexual behaviour.

DISCUSSION

This paper aimed to identify how situational factors relate with OM offences in Singapore. Identification of the relationships between factors allow for development of appropriate OM prevention measures.

Quantitative Findings

Relationship between Offender and Victim (Intrafamilial vs. Extrafamilial) and Victim's Age

There was a significant association between the age of the victim in determining the relationship with the offender being familial or non-familial. For younger victims, a larger proportion of offenders are intrafamilial figures. For older victims, offenders tend to be extra-familial figures. These findings corroborate with the findings of other studies that younger victims were often sexually abused by family members whilst older victims tend to be violated by strangers (Fischer & McDonald, 1998; Smallbone et al., 2013; Snyder, 2000). This ties in with the routine activities of the victims whereby younger ones like children spend more time under the supervision of intrafamilial caregivers whilst older ones like teenagers and adults enjoy more independence and spend the bulk of their time with extrafamilial people such as schoolmates or colleagues (McKillop et al., 2015). The shift in victim access from familial members to non-familial members is in tandem with the shift in the proportion of offenders from familial members to non-familial members as victims age. This is in support of the situational understanding of crime as a convergence of factors. A study in Queensland also provides evidence that offenders of young victims or children are often family members roped in for caregiving duties (Smallbone & Wortley, 2000). The late average age of onset of such crimes in the study suggest a more situational approach initially as opposed to an intentional one (Smallbone & Wortley, 2000). However, these provide important understanding of the patterns of OM crime in the Singapore context. Prevention targets should differ based on the age of the victim. Prevention strategies for younger people should involve psychoeducation while strategies for older victims involve interventions at places with high victim access such as train stations and bus stops. Prevention strategies for younger people should involve psychoeducation such as raising awareness among younger people of what constitutes improper contact. For older people, this should comprise intervention at places with high victim access, an example would be placing posters at areas with high victim access such as train stations and bus stops.

Younger Victims. Prevention strategies should include psychoeducation of those from the 0-6, 7-12 and 13-17 age groups, to make them aware of the potential of OM from intrafamilial members. It shoule also target adults around young children, such as intrafamilial members and extrafamilial caregivers such as schoolteachers.

Older Victims. Prevention strategies for those from the 21-25 and 26-39 age groups should include intervention at more general levels. This could involve posting posters and material in crowded public areas. This could also include engagement and prevention tips.

Time of Offence and Victim's Age

A significant association was found between the time of offence and the victim's age. In broad strokes, younger victims tend to be violated in earlier parts of the day such as the morning and afternoon whilst older victims tend to be violated in later parts of the day such as the evening, night, and midnight. These findings bear resemblance to research suggesting offenders tend to target victims of different age groups at different timings (Beauregard & Leclerc, 2007; Leclerc et al., 2015). This also ties in with offenders being rational decision makers who desire to avoid apprehension (Beauregard & Leclerc, 2007). Their offence timings therefore coincide with moments where victim access is present together with low guardianship. Given the limited studies looking specifically at OM, these findings can bolster future prevention efforts by considering routine activity of the targeted population

Age Groups: 0-6, 7-12 and 13-17. These victims likely attend school in the morning and return home to their caregivers. In these victim's routine activities, this afternoon time could represent an ideal time for offenders due to the absence of other capable guardians at home. The offenders might thus manipulate their caregiving responsibilities and molest the young victims at this timing. What is interesting is the high numbers of early morning and morning offences involving victims in the 13-17 age group. This could be due to their being victimised during their commute to school. Alternatively, this could be because of truancy or other factors that would have to be studied in greater detail.

Age Group: 21-25. This age group primarily comprises students from Institutes of Higher Learning (IHL) who may choose to study in common places throughout the campus at midnight. Students staying on campus residences such as Halls and Residential Colleges may also arrange for cohesion and bonding activities during these timings. These victims' possible routine activities at midnight puts them in the presence of motivated offenders. Due to the perceived lack of guardianship past midnight, such victims may become targets of OM.

Age Group: 26-39. Many of these victims could be working adults whereby the timings of evening, night and midnight would represent 'after-work' hours. Their routine activities at that time could consist of commuting, taking them onto public transportation and streets leading back home. Alternatively, they could be dining or socialising in F&B outlets such as hawker centres, restaurants, or bars. These locations may lead to higher exposure to motivated offenders than the workplace.

Modus Operandi and Victim's Age

A significant association was found between the MO used and the victim's age. This ties in with the findings that different perpetrators utilise different strategies for victims of different ages (Kaufman, Hilliker & Daleiden, 1996; Leclerc, Carpentier & Proulx, 2006). Younger victims of OM tend to be approached by "Contact" MO involving grooming strategies of building trust and rapport before the offence (Bennet & O'Donnohue, 2014; McAlinden, 2006). In contrast, older victims from the 13-17 and 18-20 age groups were more susceptible to "Surprise" MO similar to frotteurism (Ranger & Fedoroff, 2015). The observed frequencies for the 13-17 and 18-20 age groups were higher than the expected frequencies. This is in contrast to Leclerc et al.'s (2006) finding that such strategies would taper off by the age of 9. The study did not cover qualitative analyses of the SOFs to understand the rationale and thought processes of the offenders. However, these findings would be useful in tailoring prevention efforts for younger victims and older victims.

Younger Victims. These augment findings of the higher likelihood of intrafamilial offenders. Children from these age groups can be made aware of the types of methods utilised by intrafamilial offenders. Intervention could comprise teaching them "good touch bad touch" and other relevant information.

Older Victims. Since most older victims are targeted by strangers using surprise-based OM, intervention can target public places where such interactions occur. They can be visual cues to dissuade potential offenders from committing OM.

Modus Operandi and Number of Sexual Behaviours

The MO used was found to be significantly associated with the number of sexual behaviours. Specifically, "Contact" offences tend to involve more than one sexual behaviour while "Surprise" offences tend to involve only one sexual behaviour. While this relationship has not been explicitly studied, it does corroborate findings from the literature. "Contact" offences, resembling the process of grooming, often result in the desensitising of the victim and normalising of more intrusive behaviour (Bennett & O'Donohue, 2014). Additionally, the gradual escalation might render it difficult for victims to discern when boundaries have been violated (Wolf & Pruitt, 2019). The increased time spent between victim and perpetrator coupled with the victim vulnerability present the opportunity for more than one sexual behaviour. In contrast, offenders who utilise "Surprise" MO bear similarities with frotteurs who approach strangers from behind whilst minimising chances of identification (Ranger & Fedoroff, 2015). The nature of this offence only allows time for one sexual behaviour such as groping. Knowledge of the number of sexual behaviours associated with the MO can best advise prevention efforts in terms of possible crime locations.

Contact. Due to the increased number of sexual behaviours associated with "Contact" MO, victims are likely targeted in secluded places such as personal residences. The privacy in such locations allow time to perform sexual behaviours without interference from potential guardians.

Surprise. For "Surprise" MO, victims are often targeted in crowded public places where there is less risk of apprehension. Offences are likely a result of a spur of the moment decision and take place very quickly in contrast to "Contact" MO. Prevention could involve removing situational cues or enforcing higher guardianship to disrupt the momentary plans of these offenders.

Summary of Findings

Based on these quantitative findings, the modes of OM offences in Singapore can be constructed. The situational factors of OM differ based on the age of the victim. Younger victims from the 0-6, 7-12 and 13-17 age groups are more likely to be offended by intrafamilial offenders in the daytime. This is likely to involve a "Contact" MO with more than one sexual behaviour. Older victims from the 21-25 and 26-39 age groups are likely to be offended by extrafamilial offenders at timings from evening up to midnight. This is likely to involve a "Surprise" MO with only one sexual behaviour. Prevention strategies will thus be suggested based on the situational factors of OM in Singapore.

IMPLICATIONS

Preventing OM using the 25 Techniques of Situational Crime Prevention

Situational crime prevention focuses on the settings for criminal acts rather than on the characteristics of offenders (Eck & Clarke, 2019). Based on the routine activities theory, prevention of the convergence of motivated offenders, suitable victims and a lack of guardianship would reduce OM (Cohen & Felson, 1979). For the rational choice theory, it would be to decrease the perceived benefits or increase the perceived costs of OM crime (Cornish & Clarke, 1986). The quantitative findings from the study provide an understanding of these situational theories in the local context. To supplement the theories and findings for prevention, measures can be taken from the 25 Techniques of Situational Crime Prevention (SCP) (Cornish & Clarke, 2003). This list of possible prevention measures is based on five themes: (1) Increase the effort, (2) Increase the risks, (3) Reduce the rewards, (4) Reduce provocations, and (5) Remove excuses. A list of all 25 techniques can be found in Figure 5. A more tailored approach can be further made based on the different situations between younger victims and older victims.

Younger Victims

Based on the analysis, a routine activities framework for younger victims is conceptualised in Figure 6.

One difficulty in preventing the commission of OM is the lack of access to these routine activities. These interactions often occur in the perpetrator's home where public enforcement cannot intervene. Moreover, other relatives may not suspect any OM occurrences since the caregiver is a family member of the victim. Therefore, most of the prevention work needs to be based on "Increase the Effort" techniques.

25 Techniques of Situational Crime Prevention

Increase the effort	Increase the risks	Reduce the rewards	Reduce provocations	Remove excuses
1. Target harden • Steering column locks and immobilisers • Anti-robbery screens • Tamper-proof packaging	*6. Extend guardianship* • Take routine precautions: go out in group at night, leave signs of occupancy, carry phone • "Cocoon" neighbourhood watch	*11. Conceal targets* • Off-street parking • Gender-neutral phone directories • Unmarked bullion trucks	*16. Reduced frustrations and stress* • Efficient queues and polite service • Expanded seating • Soothing music/ muted lights	*21. Set rules* • Rental agreements • Harassment codes • Hotel registration
2. Control access to facilities • Entry phones • Electronic card access • Baggage screening	*7. Assist natural surveillance* • Improved street lighting • Defensible space design • Support whistleblowers	*12. Remove targets* • Removable car radio • Women's refuges • Pre-paid phone cards for pay phones	*17. Avoid disputes* • Separate enclosures for rival soccer fans • Reduce crowding in pubs • Fixed cab fares	*22. Post instructions* • "No parking" • "Private property" • "Extinguish camp fires"
3. Screen exits • Ticket needed for exit • Export documents • Electronic merchandise tags	8. *Reduce anonymity* • Taxi driver IDs • "How's my driving?" decals • School uniforms	*13. Identify property* • Property marking • Vehicle licensing and parts marking • Cattle branding	*18. Reduce emotional arousal* • Controls on violent pornography • Enforce good behaviour on soccer field • Prohibit racial slurs	*23. Alert conscience* • Roadside speed display boards • Signatures for customs declarations • "Shoplifting is stealing"
4. Deflect offenders • Street closures • Separate bathrooms for women • Disperse pubs	*9. Utilise place managers* • CCTV for double-deck buses • Two clerks for convenience stores • Reward vigilance	*14. Disrupt markets* • Monitor pawn shops • Controls on classified ads • License street vendors	*19. Neutralise peer pressure* • "Idiots drink and drive" • "It's OK to say no" • Disperse troublemakers at school	*24. Assist compliance* • Easy library check-out • Public lavatories • Litter bins
5. Control tools/weapons • "Smart" guns • Disabling stolen cell phones • Restrict spray paint sales to juveniles	*10. Strengthen formal surveillance* • Red light cameras • Burglar alarms • Security guards	*15. Deny benefits* • Ink merchandise tags • Graffiti cleaning • Speed humps	*20. Discourage imitation* • Rapid repair of vandalism • V-chips in TVs • Censor details of modus operandi	*25. Control drugs and alcohol* • Breathalysers in pubs • Server intervention • Alcohol-free events

Figure 5: List of 25 Techniques of SCP

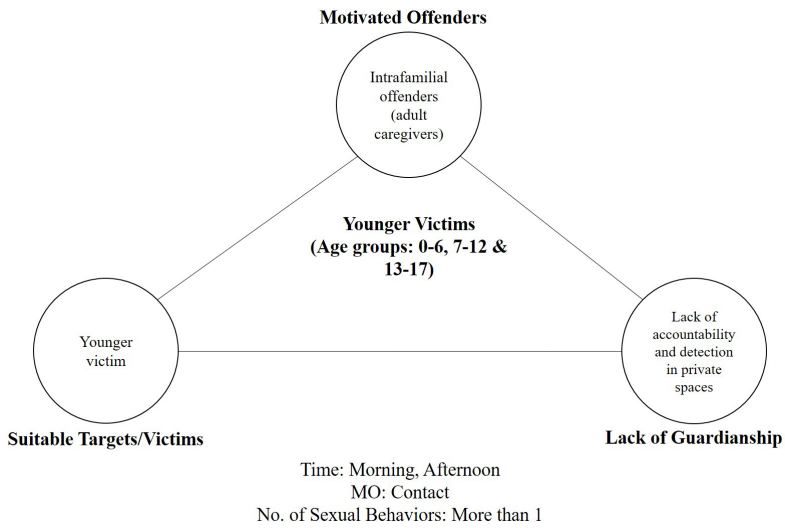

Figure 6: Routine Activities Framework of Younger Victims of OM

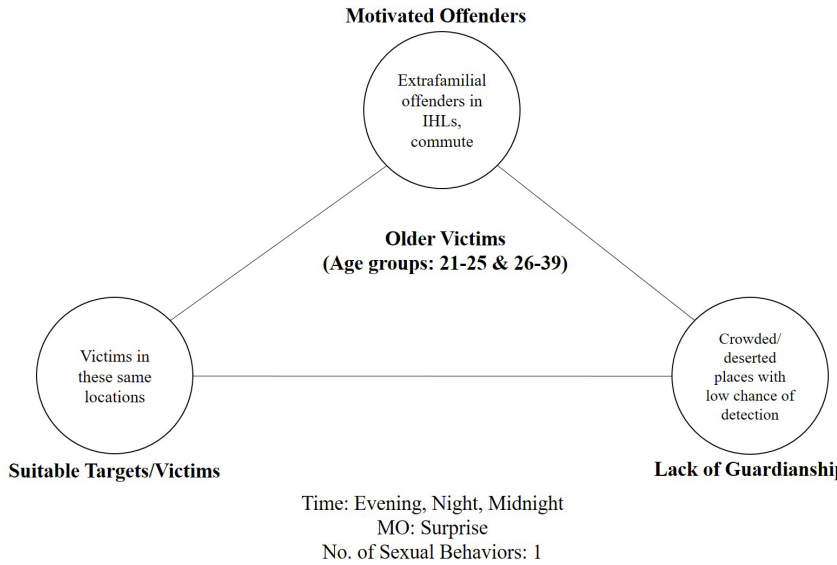

Figure 7: Routine Activities Framework of Older Victims of OM

Increase the Effort. This is primarily through target hardening of potential victims. Direct education through assembly talks in schools and sex education classes can highlight how caregivers might be committing OM. Since the MO of perpetrators is often of the "Contact" nature, potential victims can be taught how the process of grooming works. By understanding the tell-tale signs, they may be less likely to be manipulated and to seek help.

Older Victims

Based on the analysis, a routine activities framework for older victims is conceptualised in Figure 7.

Increase the Effort. Suitable Victims can be addressed to make offending difficult. However, this must be treated as a situational factor and not result in victim blaming. "Increase the Effort" techniques could consist of target hardening and deflecting offenders. In engagements, tertiary students and working adults can be educated on the situational factors of OM offences and to avoid them and target harden. Additionally, offenders can be deflected by ensuring no closed-door one-on-ones as much as possible to separate potential offenders from potential victims.

Increase the Risks. To address the Lack of Guardianship, techniques from "Increase the Risks" can be utilised. This is primarily done through extending guardianship. One measure that has been implemented by the Singapore Police to reduce OM in public is the Riders-on-Watch (ROW) scheme. This seeks to extend guardianship on public transportation where many OM offences against older victims occur. To safeguard victims from the tertiary age group, the surveillance in tertiary institutions can be strengthened. CCTVs can be installed at study areas and other places with substantial traffic at the midnight timing. Additionally, students from the tertiary age groups can be nominated as peer supporters and trained in courses such as Sexual Assault First Responder Training (SAFRT). These peer supporters could be positioned at these areas and be participants in the informal campus activities of tertiary institutions. Their presence dissuades potential offenders and can also provide immediate support for victims in distress.

Remove Excuses. Techniques from "Remove Excuses" can be used to address Motivated Offenders. Another measure that has been implemented by the Singapore Police to reduce OM

in public is the screening of public education videos to raise awareness. These videos set rules and prick the conscience of would-be offenders. These are particularly useful since the "Surprise" MO is likely to be employed against older victims. Reminders from such crime prevention materials in public and the increase in saliency of the consequences can deter spur of the moment acts by potential offenders. Further countermeasures could include putting posters in crowded public areas such as public transport, shopping malls, and toilets to serve as a warning to highlight the consequences of offending. Engagements can also be organised at tertiary institutions and workplaces to set rules and warn those who intend to offend. These engagements would set clear boundaries of what constitutes OM to dispel distorted cognitions. For instance, participants can be taught that the "lack of dissent does not equate to assent" to inappropriate behaviours as excuses for OM. Additionally, the consequences and potential punishments can be highlighted as a deterrence. This would increase the perceived costs associated with offending for potential offenders.

LIMITATIONS OF STUDY

The current study has a few limitations regarding the lack of specific literature and the lack of an offender perspective in the SOFs.

Lack of Specific Literature

While there is a myriad ofliterature examining general sex offending and particularly child sex offenders, there is limited research specifically examining OM. This paper thus leverages research on general sex offending research to deduce and hypothesise the processes involved in OM. This is especially required for the adult population of which there is relatively less work done in the area of OM.

Lack of Offender Perspective

While containing crucial details, SOFs are primarily from the victim's viewpoint. The perspective of OM offenders is also important in understanding the thought processes and considerations of OM offenders in relation to the victim and the situational context they are in. Future research should consider obtaining their perspectives.

CONCLUSION

This study seeks to provide an understanding of how situational factors affect OM offences and can be used to prevent OM offending in Singapore. While previous studies focused on dispositional traits, the authors believe an emphasis on situational factors is more useful in advising crime prevention efforts. Based on the quantitative findings, occurrences of OM in Singapore were found to be rooted in the routine situational activities of both victims and offenders. Through identification of critical situational factors of crime, measures can be implemented to disrupt the routine activities required for OM. Given the rising prevalence of OM in Singapore, this study should be timely in contributing to a reduction in the number of victims. Additionally, this paper can contribute to the specific literature base of OM offending within the overarching category of sexual offending. This is important as the considerations of OM offenders are different from other sexual offenders. Prevention measures therefore have to be tailored accordingly in order to avoid being generic. Although there may be cultural differences, the paper should provide a good context for future studies to reference and build upon. Overall, it is hoped that with an increasing literature base of OM offending, the prevalence rate of OM offences will decrease.

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CYBER ATTACKS BY TERRORISTS AND OTHER MALEVOLENT ACTORS: PREVENTION AND PREPAREDNESS

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ABSTRACT

The field of cyberterrorism has existed for as long as it has been possible to interdict or compromise computer systems. While contributions of scholars, researchers, and practitioners have enriched discussions, there are longstanding and unresolved issues of definition which can give rise to confusion. Does cyberterrorism mean attacks only by individual groups that fall within widely accepted definitions of "terrorist" or "terrorist organisations?" To what degree does the aim or intention of the malicious actor matter? This article (without sidestepping these questions) examines attacks against computer infrastructure and Critical Information Infrastructure (CII) by all actors with capability, and not just groups such as Al-Qaeda or ISIS. Examining all possible actors is necessary given that while conventional terrorist groups might have intent, they have not to date acquired the capability to carry out a genuinely destructive cyber-attack of the type that might lead to major loss of life or infrastructural damage. It is (for the most part) states which have this capability. Cyber prevention and preparedness covers a wide range. This three-part article includes technical aspects of cyber protection, systems (and people) resilience, risk mitigation, as well as nurturing talent within a viable cyber ecosystem. A case study on Singapore examines these and other relevant issues.[1]

I. INTRODUCTION

Meaning of "Cyberterrorism"

What is cyberterrorism? Is cyberterrorism simply terrorist acts (causing death, serious disruption, fear in the target population, attempting to change the ideology of a people) carried out using digital or cyber electronic means, or does it involve cyberattacks carried out by terrorists and terrorist groups? Does the actor actually matter? Can cyberterrorism technically speaking be done by a state?

Consider a widely-cited definition by Dorothy Denning in 2000:

"Cyberterrorism is the convergence of cyberspace and terrorism. It refers to unlawful attacks and threats of attacks against computers, networks and the information stored therein when done to intimidate or coerce a government or its people in furtherance of political or social objectives. Further, to qualify as cyberterrorism, an attack should result in violence against persons or property, or at least cause enough harm to generate fear. Attacks that lead to death or bodily injury, explosions, or severe economic loss would be examples. Serious attacks against critical infrastructures could be acts of cyberterrorism, depending on their impact. Attacks that disrupt nonessential services or that are mainly a costly nuisance would not."

[1] The author would like to acknowledge the assistance of Beatrice Lee and Benjamin Low in the preparation of this article. All errors and omissions remain the author's own.

Denning is precise when it comes to what types of acts constitute cyberattacks, and also importantly, is actor-agnostic: her definition leaves open the possibility that actors apart from conventional non-state terrorist groups and organisations might be caught.

The first part of this article is a discussion of cyberattacks by what are conventionally understood as terrorist organisations. Following this, in the second part of the article, the discussion is broadened to study cyberattacks by malevolent actors. These could be state and non-state actors; necessarily, the instruments could be used by terrorist groups or individuals. Preparedness against, and prevention of, cyberattacks are then discussed with the case study in the third and final part of this article.

Cyber Attacks by Terrorist Organisations

Cyber-attack plotting by terrorist organisations has a long history. This section discusses two periods: the late 1990s to early 2000s where cyber-attacks were largely aspired to, to early 2000s to 2015 when intent became more visible.

1990s –2000s: Aspiration

Terrorist groups such as Al-Qaeda have had a presence on online platforms since the late 1990s (Weimann, 2006 & 2015). Using the internet was (and is) cheap and (relatively) anonymous; it also bypassed mainstream or traditional news sources with the websites and forums, certainly in the earlier phase, largely free from any meaningful censorship. This route also provided the means to quickly reach a growing audience (Weimann, 2015).

Al-Qaeda's leadership had, from early on, a vision of attacking Western critical infrastructures, and it does seem that this vision could have encompassed remote attacks by computer or digital means (Anthony 2002). This aspirational goal devolved in time to the wider Al-Qaeda-sympathetic diaspora, members of which would, from time to time in the 2000s, make claims on various online platforms concerning the development of cyber/hacking capabilities and impending cyber- attacks (such as DDoS attacks). In general, these either never materialised or were markedly unsuccessful (Cambridge, 2017).

From time to time, individuals who claimed some sort of affiliation or link to Al-Qaeda would gain something of a reputation for hacking prowess. An example was Younis Tsouli, who became infamous as "Irhabi 007" ("Terrorist 007") from 2003 until his arrest a few years later. Starting out in various extremist forums where he uploaded instruction manuals on computer hacking, he began to support online operations linked to Al-Qaeda, and in 2005 became the administrator of the extremist internet forum al-Ansar. But Tsouli's actual hacking ability appears to have been moderate at best (Corera, 2008; Weimann, 2010).

2000s – 2015: Intent

From the early to mid-2000s, governments, analysts, and observers began to have a heightened appreciation of how terrorist organisations (such as Al-Qaeda and Hezbollah) were becoming more adept in their understanding of the possibilities that the internet and digital technologies afforded them, and how this could in turn lead to a mastery of the tools needed for a successful cyberattack (Verton, 2003).

In 2011, an Al-Qaeda video called on followers and sympathisers to launch cyberattacks against Western targets. The video, which came to public attention the following year, apparently observed that the US was vulnerable to cyberattacks, just as airline security was vulnerable in 2001 in the period leading up to the 9/11 attacks. The video called on Muslims "with expertise in this domain to target the websites and information systems of big companies and government agencies" (Herridge, 2012). However, no cyberattack from Al-Qaeda Central ever seems to have materialised.

There was an uptick in interest, and in the number of groups themselves, after the declaration of the Caliphate in 2014 (Leith, Kassirer, & Nixon, 2016). ISIS, as well as various pro-ISIS influencers and cheerleaders were keen in disseminating key texts online, or dispense advice to jihadi aspirants, through various online means, including (besides mainstream online platforms) encrypted messaging apps such as Telegram, which have become increasingly popular, notwithstanding recent crackdowns by Telegram itself and by national governments. There is evidence that *plotting* of terrorist attacks has increasingly taken place on social media, encrypted messaging apps, or the "Dark Web." In some cases, the perpetrator

can be guided "remote-controlled," as it were, by an overseas mastermind, sometimes in near real-time (Callimachi, 2017). These areas have become an increasing focus of concern for security agencies.

While various ISIS media units have been successful in disseminating messages and slickly-produced propaganda online, the lack of genuine cyber disruptive capability could be said to have continued on into the ISIS era. Threats of hacking were not altogether infrequent. On 11 May 2015, Rabitat Al-Ansar, a pro-ISIS collective, released a video titled, "Message to America: from the Earth to the Digital World," threatening hacking attacks against American and European targets. The following year, it tweeted plans to hack US targets, including government websites on 11 September 2015; these appear not to have materialised.

Pro-ISIS online groups such as the United Cyber Caliphate have carried out what could be best described as low-level hacks, attempting DDoS attacks in 2016 and 2017. The attacks were mainly focused on targets in the Middle East, and although some of the targeted sites appear to have been briefly knocked offline, the action points more towards a kind of resourcefulness rather than a high level of technical mastery (Wolf, 2017). Separately, hackers sympathetic to some degree to ISIS – in this case the group known as the Tunisian Fallaga Team – carried out a series of attacks against the UK's National Health Service (NHS) – involving defacing websites to show gruesome images of the Syrian Civil War (Sengupta, 2017).

Overall, the cyber offensive ability of groups conventionally thought of as terrorist organisations (such as Al-Qaeda or ISIS) should be considered to be of a fairly basic order, with no compelling evidence that these groups have been able to launch a full-scale cyberattack of the type that causes harm, death, or destruction, or which has instilled fear in the population of a country.

Cyber Attacks by Other Malevolent Actors

While concern over potential cyberattacks has grown in recent years, commensurate with the growth in digital and cyber infrastructure, the vast majority of serious attacks that have caused either serious damage or disruption (or monetary loss) can be traced to criminal organisations, or states. It is states, for the most part, who up till this point of time have a serious capability in the cyber sphere to cause destruction through cyber/digital means. For a sense of what the various actors are capable of, see Figure 1.

Events of recent years have shown that some states are willing and able to attack other states using cyber means (hacking) combined with social media manipulation, information warfare, troll farms, hackers, and cyber espionage operating in a mesh. The aim can be to undermine the resilience of a country, to humiliate it, or to influence the course of the democratic process. Although a full treatment would be beyond the scope of this article, it is worth at this point to consider briefly Russian interference in the 2016 presidential election in the US. One prong of this interference involved subversion and the creation of fake groups on social media to sow dissension in society. Another prong involved hacks and subsequent publishing of stolen material from the Democratic National Committee's servers in 2015 and 2016, by (it appears) more than one group linked to Russian intelligence services (Poulsen, 2019).

Finally, activity by criminal or hacktivist elements not linked to states also needs to be considered. In recent years, cybercriminals have in recent years been capable of causing a type of severe impairment which – while not amounting to physical damage – can still hinder certain types of operations. In particular, the healthcare sector has also increasingly come into the crosshairs of criminal enterprises. Theft of data (including research data) and personal information can be very lucrative, as the data can be used for identity theft and can be resold on the Dark Web. Increasingly, a particular risk area for healthcare has been the use of Internet-of-Things (IOT) -enabled devices (such as pacemakers) which can be compromised (Fireeye, 2019; O'Flaherty, 2018). More generally, it appears to be just a matter of time before the nascent IOT is compromised in other sectors as well. While some of the methods themselves are not yet firmly in place, there is evidence that the criminal underground is on the lookout for ways to refine its approaches in this respect (Hilt, Kropotov, Mercês, Rosario, & Sancho, 2019).

Individual hackers or small hacker collectives have not yet reached a level capable of causing serious

	Actor	Target	Attack mode	(Primary) Aim/ Motivation
Cyber Warfare	• States	• Military and civilian infrastructure, CII (critical information infrastructure) • Private sector • Private Sector (ICS, SCADA systems) • Civilians • Government institutions • Terrorist groups and non-state actors	• APTs (Advanced Persistent Threat) and other malware (including implanting malware/APT reconnaissance prior to open hostilities) • Social engineering • Phishing attacks • Watering hole attacks • IOT attacks • Botnet Attacks • Disinformation campaigns/ • influence operations/ attacks against election system	• Force surrender • Negotiated settlement on favorable terms • Degrade opposing side's ability in peacetime/ prior to commencement of declared hostilities • Subversion/ undermine resilience of target
Cyber Espionage	• States	• State infrastructure/ military-industrial complex • Private sector • ICS, SCADA systems	• APTs • Data exfiltration • Social engineering	• Theft of intellectual property / commercially sensitive or valuable information
Cyber Crime	• Criminal groups (including criminal groups acting on behest of states); • States	• State infrastructure • Private sector	• Malware (including ransomware) • APT • Social engineering • Phishing attacks • Watering hole attacks • IOT attacks • Botnet attacks	• Financial gain
Ideological/ Cause-based attacks/ Hacktivism	• Extremist/anti-establishment groups; • Black Hat hackers	• States • Private sector	• DDoS • Phishing • Basic malware • Defacing websites • Doxing	• Force political or social change • Sow fear in target population

Figure 1. Cyber Attacks from Actor to Aim

disruption or major monetary loss, but their activities have on occasion garnered attention from media and law enforcement. A case in point is LulzSec, a loose hacker collective with a small group of members which was behind various hacks in 2011. LulzSec's activities included attacks against Fox Broadcasting, Britain's National Health Service (NHS), and Sony Pictures (attacks included gaining access to administrator passwords, causing website outages, and accessing customer details). Law enforcement in the UK and the US took action and some of the members were arrested and charged (Winter, 2012).

There have been occasions where the actions of individual actors or small groups have had an outsized effect on ICT infrastructure. One example is the Mirai botnet, created in 2016 by three college-age students in the US, for no greater purpose than trying to gain an advantage in the online game Minecraft. Mirai eventually escaped into the wider online world,

taking control of a huge number of other computers and IOT-enabled devices. Together with the various variants it spawned, it was from October 2016 to early 2017 responsible for over 15,000 individual DDoS attacks, and for a time affected the internet in the Eastern US (Garrett, 2017).

Good prevention and preparedness does not by its very nature attempt to distinguish who the malicious actor is, and national preparedness has to be premised facing major threats first, whatever their origin. As Gen. John Gordon, Assistant Secretary for Intelligence at DHS (also at the time serving as chairman of the Homeland Security Council), observed at the RSA Conference in 2004, "The damage will be the same whether the attacker was a bored teenager, an organised criminal or a [hostile] nation or state. We need to focus on the vulnerabilities — and not get too hung up on who the attacker will be" (Gordon, 2004).

II. FOUR TIERS OF PREPAREDNESS AND PREVENTION

> *"We will be in a world of ceaseless and pervasive cyber insecurity and cyber-conflict against nation-states, businesses and individuals."*
>
> Glenn S. Gerstell,
> General Counsel, National Security Agency,
> September 2019

This section will discuss the four tiers of preparedness and prevention: international cooperation; government; private sector; and the public.

1. International Level

In the past, there have been global (or regional) efforts to strengthen cooperation on cyber issues through treaties and international agreements. An example is the Convention on Cybercrime, commonly known as the Budapest Convention, which entered into force in 2004. The Convention covers (inter alia) information sharing and mutual assistance, as well as developing a common framework for tackling cybercrime, including interference into computer and ICT systems.

Efforts like the Budapest Convention might be considered useful beginnings, but the critical issues within the global cyber debate continue to be argued over, with key protagonists unable to reach agreement on what exactly constitutes cyber conflict (and what level of cyber operations qualify as "use of force" or "attack"), whether the law of armed conflict applies in cyberspace, and what constitutes acceptable state behaviour in cyberspace both in times of conflict and peace, and what constitutes acceptable and proportional response to a cyberattack. Academics and experts have from time to time made efforts to come up with (necessarily non-binding) manuals on these issues (Schmitt, 2013 & 2017). While some of these efforts have been well-received, they have had limited real-world effect. The same may be said of efforts by individual governments – even well-regarded ones which have done considerable thinking on these issues – to set out national positions on some of these very problem-fraught issues.

It is no accident that some of the key norm-shaping mechanisms have been conceived under the ambit of the UN. The UN Secretary-General António Guterres himself has on several occasions expressed concern over the use of cyber means for malicious purposes, noting that cyberattacks had contributed to diminishing trust among states (United Nations Office for Disarmament Affairs, 2018). Cyber features prominently in the UN Agenda for Disarmament, especially when it comes to promoting responsible behaviour and ensuring peace and stability in cyberspace (Ibid). There are, at the time of the writing of this chapter, within the UN two separate ongoing deliberative processes that are ongoing – the UN Group of Governmental Experts (GGE) and the UN Open-Ended Working Group (OEWG). Both seek to address the issue of promoting responsible state behaviour in cyberspace.

A full discussion on global debates on international norms, rules of the road, and acceptable state behaviour falls beyond the scope of this article. However, it can be observed here that amidst ambiguity and lack of settled consensus on norms, some powers could be said to have already entered into a state of undeclared cyber warfare – activity that is usually deniable (or denied) and calibrated to stop just short of the level that might invite an armed response or a declaration of hostilities in the physical world (Porsche, 2019). Given this reality, and given the absence of any likelihood of global agreement on acceptable behaviour in cyberspace, governments themselves, depending on national contexts, often have had to take the overall lead in securing sovereign cyber defences. The private sector (given the risks of damaging hacks, ransomware

and IP theft) has also begun to pay considerably more attention to cybersecurity than in the past. Finally, good cyber hygiene and preparedness at the level of the individual has also been increasingly emphasised by experts and governments as the cornerstone of cyber resilience.

2. Government/National Level – The Cyber Ecosystem

As we increasingly become networked at a personal level, and as the economic foundations of states are increasingly tied to digital infrastructure and the digital economy, governments, corporations, individuals and national (as well as international) ICT infrastructures face an enormous range of threats. These span from state actions almost amounting to cyberwarfare to hacking, espionage (which can involve the theft of secrets and IP), to botnets created for various purposes.

That is just the present. With an unavoidable future of information technology ever more embedded in our everyday lives, plus the promise – and peril – of the Internet of Things (IOT), cyber threats that did not exist in a not-so distant past are now moving from the realms of the conceptual into concrete emergent threats. The intensification of the threat should not therefore be measured solely in terms of numbers of malware attacks; the diversification of the malware itself and evolution of hackers' methods bear watching.

The use of Artificial Intelligence (AI) in cyberattacks is a case in point. Experts note that conceptual models for AI-powered attacks (for example, to evade anti-virus mechanisms, or to crack passwords) exist and can be used to strengthen existing malware. There have already been cases of voice "deepfakes" used to trick unsuspecting company employees to make payments to fraudulent accounts (by using AI to convincingly spoof the voice of the CEO or senior company official) (BBC, 2019).

The cyber environment is therefore by default a compromised one. Cybersecurity has had to become much more than simply the state or its constituent parts repelling attacks. Governments and corporations alike have increasingly come to acknowledge that cybersecurity paradigms envisaging complete protection, and all attacks repelled, is chimerical. Rather than focusing on absolute prevention, or trying to achieve a "good" level of cybersecurity, some of the most practical – not to mention sensible – approaches emphasise overall risk mitigation, minimising the impact of cyber intrusions, and defence-in-depth to enable systems continuity. In practice, this means a shift in focus toward cyber resilience, which the US National Institute of Standards and Technology, has usefully defined as "the ability to anticipate, withstand, recover from, and adapt to adverse conditions, stresses, attacks, or compromises on systems that use or are enabled by cyber resources" (Ross, Pillitteri, Graubart, Bodeau, & McQuaid, 2019).

One aspect of resilience and overall risk management has to do with technical approaches and systems engineering. This might involve regular systems upgrades and building in of specific redundancies and back-ups with the system. These should not be treated as an afterthought: the systems that are genuinely cyber resilient are those which have these security features and redundancies built into the architecture from the design stage. If done correctly, the mission-critical functions of an enterprise will be better able to withstand cyberattacks, respond adaptively, and also operate even when compromised to some degree (Ross, 2019).

States that have considered the issue deeply, however, assess that cyber resilience is not simply a technical or engineering competence. High-level direction and decision, as well as a comprehensive vision, is necessary in order to communicate national objectives in the cyber domain. Increasingly, this has come in the guise of holistic cyber security strategies or masterplans. These might encompass (for example) robustness (containing threats and repelling them), resilience (which either at the government or private sector level might involve mitigation, sharing information, public education), and other aspects of defence (early warning, deterrence), with these three factors being interdependent (Matania, Yoffe, & Mashkautsan, 2016). By the end of 2018, over 90 countries had such a strategy (NATO Cooperative Cyber Defense Center of Excellence, 2019). The actual content however varies from country to country: Finland's Cyber Security Strategy has three main prongs: the development of international cooperation, better coordination of cybersecurity management, planning and preparedness of cyber security and the development of cyber security competence and skills, while the four pillars of Singapore's Cybersecurity

Strategy pertain to resilient infrastructure(s), a safer cyberspace, a vibrant cybersecurity ecosystem, and strong international partnerships.

Government has a critical role in instilling a mindset and culture of cybersecurity throughout all levels of society. It also sets standards (e.g. through regulation), and ensures accountability. Transparency at all levels (government, the private sector, and the public at large) is critical in order for relevant agencies to obtain a holistic threat picture. Several nations have thus introduced within their cyber legislation or frameworks mandatory reporting of cyber breaches – especially breaches that cross a certain threshold of severity. Australia, for example, made it a legal requirement through its Notifiable Data Breaches Scheme in 2017 for organisations to notify individuals as soon as practicable when their personal information is involved in a data breach that is likely to result in "serious harm" (Barbaschow, 2018). Typically, overarching cyber legislation extends to cover the private sector, with governments assessing that cybersecurity is a public good that cannot be provided by the market. A further calculation is that it is unsatisfactory to allow cybersecurity standards to be left to the private sector (which might see cybersecurity primarily as a cost item, or which might lack incentives to invest in cybersecurity) to decide.

At the heart of national cyber defences, in terms of operational readiness, ought to be a Computer Emergency Response Team (CERT). Ideally, this should be much more than a team of technical experts attempting to defeat malware attacks. Although the core work of CERTs involves minimising the risks and effects of cyberattacks, effective CERTs look holistically at the cyber threat surface and mitigation efforts: these might involve data security, endpoint security, testing and national (or sector-specific) cyber drills.

Near the top of state/CERT priorities for cyber defence has to be the protection of critical information infrastructures (CII) – computer systems directly involved in the provision of essential services. Examples might be the power grid, telecommunications services or the banking system. CII are complex and often interdependent, and the prospect of a sophisticated cyberattack crippling CII (potentially with knock on effects cascading through the economy and through other sectors) has now become a tangible threat (Cavelty & Dunn). It is on account of this that national cybersecurity exercises for key CII are a regular occurrence for states which prioritise cybersecurity. Besides multi agency involvement from the government, the best of these exercises bring in the private sector (which would have an operational involvement, or sometimes ownership in whole or in part) over the sector in question. One such exercise (held in November 2019) was GridEx V, which tested responses in real-time to cyber/physical threats against the North American energy grid. Over 6,500 participants from 425 government and energy sector organisations (from Canada and Mexico) participated in the biennial event. Given the interdependencies and potential learning points, it is unsurprising that there was representation from other CII sectors (including telecommunications and natural gas (Kovacs, 2019).

Governments are often in receipt of the most up to date cyber threat intelligence. Mechanisms need to be devised to share information on specific threats, or provide guidance of a more general variety from time to time to the private sector. The Australian Cyber Security Centre (ACSC) for example shares detailed strategies with organisations to manage or mitigate cyber threats, with its 'Essential Eight Maturity Model' coming from three tiers of maturity that enables organisations to see how fully aligned they are with the mitigation strategy (Australian Cyber Security Centre, 2019).

Public-private partnerships can be useful in several respects. Chief among them is the creation of mechanisms that enable information sharing on cyber threats. One example is the US Information Sharing and Analysis Centers (ISAC) in the US, created in 1998, as a public/private sector partnership that serves to share information on cyber threats at the industry level with the aim of protecting critical infrastructure (Vijayan, 2019). These efforts were supplemented in 2015 by the addition of more devolved (and in theory sector-agnostic) Information Sharing and Analysis Organizations (ISAO), with President Obama tellingly observing at their creation that "Government cannot do this alone. The fact is, the private sector cannot do this alone either, as the government has the latest information on threats" (Statt, 2015).

Other nations have developed their own models for sharing information and bringing both public and private sectors up to speed on cyber threats. The UK's National Cyber Security Centre (NCSC) is an example. The NCSC has access to government intelligence on

cyber threats, but also pools together experts from both government and private sector, disseminating its threat analyses and assessment to critical infrastructure providers in and out of government (Calam, Chinn, Porter, & Noble, 2018).

3. The Private Sector

As organisations transform their businesses, the threat surfaced has vastly enlarged, particularly with IOT devices increasingly embedded in processes (Bauer, Scherf, & von der Tann, 2017). It has become commonplace that "there are only two types of companies – those that know they've been compromised, and those that don't know. If you have anything that may be valuable to a competitor, you will be targeted, and almost certainly compromised" (Gross, 2011). Private sector enterprises have to consider risk mitigation and cyber resilience as seriously as the government, which itself often has limited ability or leverage to be able to enforce some of the best practices discussed above.

Certain sectors have a holistic appreciation of cyber threats, and have a strong incentive to put in place measures to protect their systems and client data. Notwithstanding several well-known successful attacks against them, financial institutions (to take one example) do regular penetration testing, and share information on threats with national cyber authorities or with the financial regulator. But in practice, this level of vigilance and mitigation is not consistently replicated throughout the private sector. One all-too-common error is treating cyber-security as an issue solely in the domain of IT specialists; another is that executives at the C-Suite level may simply treat cybersecurity as another cost item. Even where managements might be willing to allocate resources to cybersecurity, the assumption often is that the issue can be dealt with by allocating funds in the budget cycle. Many companies fail to appreciate that this is far from sufficient. Given that cyber-threats represent in fact a global enterprise risk, mindset shifts are required from top management down, with cyber taking centre stage rather than being tacked on as an afterthought.

The actual best practices for cybersecurity are well-known, and, if the right mindset exists at the management and employee level, relatively simple to implement. Some examples:

- Providing appropriate training of employees to understand the vulnerabilities (both cyber and behavioural); embedding data security in every aspect of daily operations.
- Downloading the latest security software and patches; protecting resources through regular maintenance (including remote maintenance).
- Use of two-factor authentication, or other means (for example, physical tokens) identify verification; other forms of access management.
- Use of encryption; secure connections to websites (https as opposed to http) at scale (Sulmeyer, 2018).
- Other systems safeguards (segmentation; privilege restriction; Enterprise Digital Rights Management; creating redundancies).
- Use of automated scanning and testing; endpoint detection and response (Ross, Pillitteri, Graubart, Bodeau, & McQuaid, 2019).

What has been presented above should (in theory at least) operate in a situationally-aware mesh. While there are no failsafe solutions either individually or in combination, observing these tenets does afford a degree of mitigation and preparedness (Doffman, 2019). Several high-profile cyberattacks have been shown through subsequent investigation to have been avoidable if such measures of a basic nature had been in place. For example, the breach of the credit reporting agency Equifax in 2017, which resulted in the compromise of data pertaining to just under 150 million individuals, could have been prevented by installing basic patches for a vulnerability that had been known for months (Newman, 2017).

One further observation: some of the most commonplace threats stem from attacks committed by "insiders" (Bailey, Kolo, Rajagopalan, and Ware, 2018). The insider threat has been described by the DHS' National Cybersecurity and Communications Integration Center as "…a current or former employee, contractor, or other business partner who has or had authorised access to an organisation's network, system, or data and intentionally misused that access to negatively affect the confidentiality, integrity, or availability of the organisation's information or information systems." In practice, the insider threat can extend beyond malicious employees to those who were negligent or careless (or who were co-opted in some way) in a manner that allows malicious actors to exploit, or do damage to the ICT systems and data of the company, enterprise or government agency in question. While some

of the measures described further above might mitigate aspects of the insider threat, there are also other solutions that can be deployed. These include user-behaviour monitoring software, or predictive analytics (incorporating tools such as machine-learning applications) that can identify behaviours that fall outside of accustomed patterns.

Corporations in the private sector as well as governments that take cyber security seriously have one thing in common – they recognise the need to develop multidisciplinary teams examining (and tasked with maintaining) cyber security from all angles – not just the technical. Experts who understand behavioural sciences are needed to complement computer and software engineers (Various authors, 2019). In addition, innovative thinking should be encouraged when it comes to rooting out potential weaknesses. Bug bounty programs (where "ethical" hackers are tasked with finding weaknesses in code and applications) have been useful in both the private and public sector, and governments with a holistic view on these matters have tended to encourage a culture of ethical hacking (BBC, 2019). Separately, enterprises (as well as government agencies) sometimes employ "red cells" or "red teams" to test the level of cyber security both at the systems and employee level. At a basic level, these teams may (just like CERTS) send out spoof phishing emails to test the levels of employee alertness. But true red teams, typically employed by agencies with a mature security posture, are capable of far more advanced activities if given the remit, and go beyond simple penetration testing. They may be allowed (for example) to try almost any measure to hack into the systems of the enterprise or agency, testing the responses of the in-house CERT (Sheridan, 2018).

One final comment: the "offensive" side in cyber always seems to be one step ahead of a defence frantically playing catch-up (Hutton, Wong, & Gagnon, 2018). This is often not on account of technical failures such as deficiency in malware detection, but it is often tied to a lack of awareness of cyber security; indeed, many high-profile hacks have had at their root human weakness. These might span an entire spectrum, ranging from weak (and easily exploited) passwords, failure to secure Wi-Fi connections, the opening of phishing emails that contain malicious code, being lured to an online "watering hole," or thoughtlessly inserting a compromised USB thumb-drive into an open port. It has thus become a commonplace that humans are the weakest link in cybersecurity. Several national cyber centres, including some of those mentioned above, give to the general public also guidance on cybersecurity.) But the cyber threat is not as visible as (say) terrorism, and, unlike kinetic attacks by terrorists, the attack may have been ongoing long before the target is aware. Good cyber hygiene at the personal level is often a key component of national plans for shoring up cyber defences. While it cannot be said that any country has achieved complete competence of cybersecurity over the government, private sector and people pillars, some have advanced further in the journey than others. The defence efforts of Singapore will be discussed in the following case study.

III. CASE STUDY ON SINGAPORE

Singapore's SMART Nation: "Baking" in Security

> *"Cyber security is a key enabler for Smart Nation. We can't be a Smart Nation that is trusted and resilient if our systems are open and vulnerable."*
>
> David Koh,
> Chief Executive, Cyber Security Agency,
> 9 June 2016.[2]

> *"We have to bake [data] security into the design [of the SMART Nation]."*
>
> Dr Vivian Balakrishnan,
> Minister in charge of the SMART Nation initiative,
> 27 November 2019.[3]

The Smart Nation: Opportunity and Risk

Singapore is firmly on the path to becoming a SMART Nation – a vision launched by its Prime Minister, Lee Hsien Loong in 2014. This is, in the words of the government agency tasked with implementing the vision,

[2] Internet Policy Part of Cyber Defence', *The Business Times*, 10 June 2016. Available at: https://www.asiaone.com/singapore/internet-policy-part-cyber-defence-ida-csa

[3] *Public Sector Data Review Committee Report*, November 2019. Available at: https://www-smartnation-sg- admin.cwp.sg/docs/default-source/press-release-materials/psdsrc-main-report.pdf

"….an ongoing digital revolution, and advancements in digital technologies are transforming the way we live, work and play. We envision a Smart Nation that is a leading economy powered by digital innovation, and a world-class city with a Government that gives our citizens the best home possible and responds to their different and changing needs.

At the broadest level, the economy is the biggest domain driving Singapore's growth and competitiveness. It is supported by the Government, which is leaning forward to catalyse growth and innovation across all domains, including the public sector. Crucially, these efforts are underpinned by efforts to ensure that all segments of society are able to harness digital technologies and benefit from them."[4]

The nascent vision brings with it seemingly immense possibilities in terms of economic development, societal advancement, and interconnectedness (through, for example, the IoT). But the vision also brings with it a vastly expanded threat surface. The SMART City generates a large amount of data which is of interest to criminal syndicates, as well as states keen to learn more about the underlying resilience and vulnerabilities of the nation.

A second issue is awareness at the people level. Here, it is worth making a comparison with Estonia. Both countries are technologically advanced and relatively small, and both have suffered serious cyberattacks in the past. But while Estonia has a large neighbour that might attempt to undermine it from time to time, including through the use of cyber means (particularly at times when the bilateral relationship is especially fraught), Singapore has no such adversaries – at least none located at its doorstep. Singapore has, by almost all measures, been shielded for decades from major security incidents of the type that others, including near neighbours, have seen – not least terrorist attacks. This can partly be put down to an exceptionally competent security apparatus that works largely out of the limelight. But the sheer fact of Singapore's "normalcy," somewhat counterintuitively, weighs against efforts to protect the people and systems from cyber threats. The latter type of threats, unlike kinetic terror threats (which are visible), cannot easily be measured (since there is often no visible damage, nor are there direct fatalities). The seemingly invisible nature of the threat therefore has bred a degree of complacency and poor security consciousness. Of 2,035 respondents polled in the Cyber Security Agency's 2018 edition of its public awareness survey, approximately 34% had stored their passwords in their computers or wrote them down, or used the same password for work and personal accounts (*TODAY*, 2019). A major nationwide cybersecurity survey conducted by the Cyber Security Agency (CSA) in 2019 found seven out of ten respondents exhibiting high levels of concerns when it came to have their computers hacked, having personal information stolen, or falling victim to an online scam. But less than half of respondents felt like they themselves would fall victim to a cyberattack (*Straits Times*, 2019).

Compounding complacency is the lack of awareness of the dangers that the much-heralded future brings. The reality of the SMART nation means innumerable IOT nodes at the individual, household or precinct level. These might include smart devices at home, personal SMART wearables, or smart CCTV systems – all might have interlinkages, and all can in theory be compromised, especially in a climate where individuals do not routinely change default passwords, and routinely log onto unsecured Wi-Fi networks (Ang & Jayakumar, 2016).

Another concern is the security of Singapore's Critical Information Infrastructure (CII). Singapore has eleven designated CII, which encompass sectors that are responsible for delivery of critical services. These are: government, InfoComm, energy, aviation, maritime, land transport, healthcare, banking and finance, water, security and emergency, and

[4]Cf. 'Transforming Singapore'. Available at: https://www.smartnation.sg/why-Smart-Nation

[5]The Strategy has one of its key tenets, strengthening the resilience CII. The others tenets are: (a) mobilising businesses and the community to make cyberspace safer by countering cyber threats, combating cybercrime and protecting personal data; (b) developing a vibrant cybersecurity ecosystem comprising a skilled workforce, technologically-advanced companies and strong research collaborations, so that it can support Singapore's cybersecurity needs and be a source of new economic growth, and (c) stepping up efforts to forge strong international partnerships, given that cyber threats do not respect sovereign boundaries. Cf. Available at: https://www.csa.gov.sg/news/publications/singapore-cybersecurity-strategy; for the full strategy see: https://www.csa.gov.sg/news/publications/~/media/0ecd8f671af2447890ec046409a62bc7.ashx).

media. CII protection is a core part of Singapore's Cybersecurity Strategy, launched in October 2016.[5]

One concern, falling into the category of "Digital Pearl Harbour" scenarios, has to do with the ICS and SCADA systems that play a critical role in Singapore's utilities. The provision of some of these utilities and resources could almost be considered an existential issue – a large part of Singapore's water supply is imported from neighbouring Malaysia. Although there has to date been no major ICS/SCADA attack against Singapore's utilities (not of the type that has caused massive disruption or physical damage), there has been a significant attack against one CII (healthcare – discussed below) (*Straits Times*, 2016). It is unsurprising that CSA has in recent years organised large multi-sector cyber preparedness and crisis management exercises involving all CII operators (*ChannelNewsAsia*, 2017). Separately, a masterplan developed by CSA and industry partners, the Ops-Tech Masterplan, which has a core focus safeguarding CII through public-private partnerships, has also been unveiled in 2019 (*ChannelNewsAsia*, 2019).

Awareness and Talent

Singapore has decided to make cyber security a national priority. Partly in recognition of cyber threats, and also of the threats posed by hybrid activity and disinformation, a new "digital defence" pillar was added to Singapore's Total Defence framework on 15 February 2019, the first addition of a new pillar (the others being military, civil, economic, psychological defence) since the introduction of the Total Defence concept in 1984 (*TODAY*, 2019).

Beyond the symbolic, concrete moves aimed at raising ground awareness and instilling cyber hygiene from a young age have gathered pace in recent years. CSA regularly runs campaigns targeting ordinary citizens, aimed at getting them to understand the basics (such as strong passwords, how to recognise phishing emails). CSA's Cybersecurity Awareness Campaign began in 2017 and, into its third edition in 2019, involves roadshows for the general public, including in educational institutions. There is the recognition, like in Estonia, that the youth are a demographic segment that should be particularly drawn in early into the cybersecurity ecosystem. Besides working cooperation with the Ministry of Education to introduce cyber wellness programme in schools, CSA runs Singapore Cyber Youth Programme (SG Cyber Youth), which has multiple sub-initiatives within it. An example is the Youth Cyber Exploration Programme (YCEP) boot camp, which saw in 2019 all five polytechnics in Singapore hosting 400 students from over 30 secondary schools. The top students from these boot camps took part in the inaugural YCEP Central Capture-the-flag (CTF) Competition. CSA also plans to reach out to thousands of youths in the coming years through boot camps, competitions, learning journeys and career mentoring sessions.[6]

Bug bounty programs have also been used with increasing regularity by government agencies. A major such program is run by GovTech, which has the lead role in implementing Smart Nation vision and leading the government's own digital transformation. These programs thus far appear to have proved reasonably effective in unearthing vulnerabilities; added plusses include demonstrating a culture of openness and willingness on the part of officialdom to engage with the ethical hacking community, in addition to spotting talent that can potentially contribute to national cyber defence down the line in more tangible ways (*ChannelNewsAsia*, 2019; *Straits Times*, 2019).

Government/Government-linked Systems

Singapore consistently ranks highly in various regional and international surveys of cyber preparedness and readiness (UN International Telecommunications Union, 2017 & 2018). But these have not prevented Singapore, its government agencies, and other institutions within the country from being the victim of cyberattacks, with David Koh, Chief Executive of the Cyber Security Agency of Singapore, observing "Singapore is under constant attack on the cyber front. We are a prime target for cyber criminals, gangs, hacktivists and even state actors" (*Business Times*, 2016).

Some of the best-known cyberattacks have targeted government agencies. The IT system of the Ministry of Foreign Affairs (MFA) was breached in 2014 (*TODAY*, 2015). In another cyberattack in 2017

[6]Available at: https://www.cyberyouth.sg/ and https://www.csa.gov.sg/programmes/sgcyberyouth

against a Ministry of Defence system providing system internet to personnel working in Singapore Armed Forces (SAF) premises, hackers stole national identity card numbers, telephone numbers and birth dates of approximately 850 personnel (*Straits Times*, 2017 & 2019). Other noteworthy cyberattacks that did not directly target government ministries, but targeted data linked to government. In April 2017, in the first sophisticated cyberattack against Singapore universities, hackers infiltrated the networks of the National University of Singapore (NUS) and the Nanyang Technological University (NTU) in what appeared to have been an attempt to steal sensitive government and research data (*Straits Times*, 2017).

Internet separation was implemented on government networks in 2017, affecting approximately 143,000 civil servants (*Guardian*, 2016; *Straits Times*, 2017). It was recognised, even at the time of implementation, that the measure was not a fool proof solution to protect government servers. But the aim was to afford some mitigation - to prevent malware finding its way into classified government systems, and to prevent classified emails from finding their way to unsecured computers and personal devices (*Straits Times*, 2019).

The SingHealth/IHiS Breach

Internet separation has something of a bearing on Singapore's worst cyberattack in its history, which took place between June and July 2018, targeting Singapore's health records system. The agency targeted, Integrated Health Information Systems (IHiS), was the central IT agency responsible for Singapore's healthcare sector. IHiS was not a government ministry, but the data compromised (1.5 million SingHealth patients and the outpatient prescription records of 160,000 others, with the health data of Singapore's Prime Minister repeatedly targeted) came under SingHealth, Singapore's largest cluster of public healthcare institutions. The attacker was well-resourced and persistent, with the authorities suggesting that an unnamed state actor lay behind the APT responsible for the breach (*Straits Times*, 2018). A cyber threat monitoring company, Symantec, subsequently laid the finger of blame on an APT actor, Whitefly, which "is a highly adept group with a large arsenal of tools at its disposal, capable of penetrating targeted organisations and maintaining a long-term presence on their networks" (Symantec, 2019). Malicious activity finally came to a complete halt after internet surfing separation was implemented on SingHealth systems on 20 July 2018.[7]

The high-level Committee of Inquiry (COI) examining the causes of the breach as well as the response to it found lapses in procedures and especially human weaknesses.[8] While some individuals in the incident response team had attempted in the midst of the attack to remediate matters, there were also basic failures (on the part of a key incident response manager) when it came to recognising the severity of the attack, and (somewhat startlingly) recognising what in the first place constituted a security incident. These human failures, besides leading to delays in the ongoing attack being reported up the chain of command and to authorities such as CSA, also meant that opportunities to mitigate the effect of the cyberattack were missed (*ChannelNewsAsia*, 2019).

The inquiry made 16 main recommendations to improve processes and prevent a recurrence. One category of priority recommendations concerned improving competencies and staff awareness (including more effective incident response), as well as levels of cyber hygiene. The recommendations also included ensuring privileged administrator

[7] *Public Report of the Committee of Inquiry into the Cyber Attack on Singapore Health Services Private Limited's Patient Database on or around 27 June 2018* (10 January 2019), p. 54, p.71 and p. 195. Available at: https://www.mci.gov.sg/-/media/mcicorp/doc/report-of-the-coi-into-the-cyber-attack-on-singhealth-10-jan- 2019.ashx. In the wake of the IHiS/SingHealth attack, senior officials noted that internet separation should have been implemented at an earlier point in the public healthcare system (just as it had been done in the public sector). 'Internet separation 'could and should have' been implemented in public healthcare system: DPM Teo', *ChannelNewsAsia*, 24 July 2018. Available at: https://www.channelnewsasia.com/news/singapore/internet- separation-should-have-been-implemented-teo-chee-hean-10558584

[8] The inquiry reached no definitive finding as to how the malicious actor first gained entry into the IHiS system. But on the balance of possibilities, a spear phishing attempt that successfully infected a SingHealth front-ended workstation with malware seems to have been the most likely explanation. *Public Report of the Committee of Inquiry into the Cyber Attack on Singapore Health Services Private Limited's Patient Database on or around 27 June 2018* (10 January 2019), p.54. Despite the title of the report, the earliest signs of a system compromise in fact dated back to 23 August 2017, with the cyberattack spanning the period 23 August 2017 to 20 July 2018 (Idem, p.51).

accounts would be subject to greater monitoring, and the use of two-factor authentication when engaged in administrative tasks. On the "technical" side, recommendations included real-time monitoring of databases, implementing a robust patch management to address security vulnerabilities, and putting into place controls to better protect against data theft (*Straits Times*, 2019).

Beyond policy-related and technical aspects of the recommendations, more important was the overall philosophy the COI took, as these had implications for cyber preparedness in all other large organisations that might have data others covet. The COI in its report suggested the near-inevitability of sophisticated attackers being able to breach any network. Organisations therefore had to adopt an "assume breach" mindset and "defence in depth" strategy. This involves inter alia: arming themselves with sophisticated security systems and solutions which can facilitate early detection of malware, and by adopting emerging technologies, such as database activity monitoring endpoint detection and advanced behaviour-based analytics.[9]

Breaches like the IHiS/SingHealth incident have the potential to affect public confidence in the government as custodian of public data (*ChannelNewsAsia*, 2019). As a result, the government in March 2019 convened a high-level Public Sector Data Security Review Committee, chaired by the minister in charge of Public Sector Data Governance. The five main recommendations of the Committee (which reviewed data management practices across all 94 public agencies to identify risk areas) will be mentioned here as they have a bearing on cyber preparedness:

- Improving data protection and preventing data compromise through measures like protecting data directly when stored to ensure it is unusable even if extracted.
- Improving detection and response to data incidents through measures like designating the Government Data Office to monitor and analyse data incidents that pose significant harm.
- Raising competencies and instilling a culture of excellence through measures such as training all public officers to attend improved data security training every year.
- Accounting for data protection at every level through measures like amending Singapore's Personal Data Protection Act to cover third-party vendors handling Government data.
- Ensuring a continuous approach to improving data security through measures like improving the Government's expertise in data security technology.

Lapses found by the committee (members of which were present in the majority of agencies reviewed) included failings in management of privileged user accounts, user access reviews, and encryption of emails with sensitive data (*ChannelNewsAsia*, 2019). These findings came on top of earlier government audit findings made public which had similarly pointed to weaknesses in government agencies' IT controls (Republic of Singapore: Auditor-General's Office, 2019).

A concerted push to accelerate remediation could be discerned from late 2019 onwards, with the Smart Nation and Digital Government Group (SNDGG – which consists of the Smart Nation Office under the Prime Minister's Office and GovTech), working with public agencies to effect deep changes at the "technical, process and people levels to address the systemic causes" behind findings of vulnerabilities by earlier committees. Announced in early January 2020 were several measures to reduce vulnerability at the IT, systems, and people level. These pertained to areas of concern that had been flagged repeatedly by previous committees, such as the introduction of automated tools across government agencies that would enable review of the activity logs of privileged user accounts and flag any unexpected behaviour, with a new system planned that would perform targeted checks using audit and incident data. Finally, in the works is a comprehensive revision of the government instruction manual dealing with IT security, with the

[9] *Public Report of the Committee of Inquiry into the Cyber Attack on Singapore Health Services Private Limited's Patient Database on or around 27 June 2018*, p. 225. A great many of the "technical" recommendations from the COI were not new and were reminiscent of recommendations put forward in other contexts and locations. See for example the US CERT's 2019 recommendations for IT solutions providers and their customers. Recommendations (which find echoes in the SingHealth COI report) include applying the principle of least privilege to their environment, integrating log files and network monitoring data from IT service provider infrastructure and systems into customer intrusion detection and security monitoring systems for independent correlation, aggregation and detection, and working with customers to ensure hosted infrastructure is monitored and maintained, either by the service provider or the client. *Chinese Malicious Cyber Activity*. Available at: https://www.us-cert.gov/china

new standards to be benchmarked against leading industry practices (*Straits Times*, 2020).

These initiatives to protect government systems and data require adequate funding. February 2020 saw the announcement during the course of the annual Parliamentary budget debate of $1 billion over the next three years to build up the Government's cyber and data security capabilities. The funds will be used to safeguard citizens; data and critical information infrastructure systems, with the Deputy Prime Minister and Finance Minister Heng Swee Keat emphasising in the course of his announcement how data security is a vital prerequisite and key enabler of Singapore's digital economy (*ChannelNewsAsia*, 2020).

The Private Sector

One of the SingHealth/IHiS COI recommendations was that partnerships be formed between government and industry to achieve a higher level of collective security. There have been some positive developments. A case in point is the launch of a joint venture centre of excellence (a partnership between an entity partly-owned by a government investment arm and IronNet, founded by former NSA Director Gen (retd.) Keith Alexander) to protect critical infrastructure against sophisticated cyberattacks (*Straits Times*, 2019).

However, at the level of ordinary business, significant issues exist. Some of these have to do with factors cited further above which are common to companies around the world: key personnel at the management or C-suite level might still view cybersecurity as purely an IT issue (not a business risk), with investments in cybersecurity seen as a cost item on the balance Sheet (*Straits Times*, 2017). While major multinationals and institutions such as banks may have the resources and the perspective to recognise the need not just for investments in cybersecurity but also for the right mindset, a lack of knowledge and resources is preventing local small and medium enterprises (SMEs) from adopting robust cybersecurity measures." Many attacks that target SMEs come either from pre-identified risks or from insider threats (*Straits Times*, 2019). CSA and other agencies such as the Infocomm and Media Development Authority (IMDA) have worked on this issue. On offer are tailored cybersecurity solutions and a one-stop portal to access grants to acquire and deploy these solutions.[10]

Observers of Singapore's SMART Nation drive will have been given considerable food for thought by events of recent years. Despite many positives, it is clear that all major constituents – government, private sector, and citizens and residents – still have areas for improvement. The private sector needs (especially below the level of MNCs and other well-resourced entities) to take cybersecurity more seriously and to see it as a continuing enterprise risk. The government needs to heed lessons of various lapses and breaches; lest the overall levels of public confidence reposed in the state to keep Singapore safe start to dip (of which there has been no sign yet). The people, for their part, can only progress to a certain level of maturity if the key drivers of awareness and education remain the slew of well-intended initiatives from relevant government agencies. If the people themselves are not seized with these issues, there may be further amplification of the sentiment, evinced already by some observers, that the weakest link in Singapore's cybersecurity efforts may well be the people (*TODAY*, 2019).

All this will in turn have a bearing on Singapore's future. It will certainly, given time, become a truly SMART Nation. But will it become a *secure* SMART Nation?

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[10] Opening Remarks by Dr Janil Puthucheary, Senior Minister of State (SMS), Ministry of Communications and Information and SMS-in-Charge of Cybersecurity at the Launch of the Cyber Security Call for Innovation 2019, 2 October 2019. Available at: https://www.csa.gov.sg/news/speeches/cybersecurity-call-for-innovation-2019

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CULTURAL INTELLIGENCE:
WHEN COMMON SENSE IS NOT COMMON – A HUMANITARIAN PERSPECTIVE

Hassan Ahmad
Humanity Matters

ABSTRACT

The effectiveness of response to a disaster, emergency or crisis is dependent on its timeliness and appropriateness. Access to the affected grounds and victims determines the timeliness, while accuracy of information of the site and severity of the incident influences the appropriateness, which in turn affects how the intervention is approached. There is, however, no universal approach that works in all situational and cultural contexts. The prevailing COVID-19 crisis shows, for instance, that although a pandemic threatens and affects every society around the world, different countries may take different approaches and measures to combat a common public health enemy. Based on the author's direct ground observations and exchanges during regional humanitarian responses and engagements across 26 Asian countries and territories over 20 years from 2001 to 2021, this article explains the value of cultural intelligence in improving the efficacy of relief missions.

APPROACHING HUMANITARIAN INTERVENTIONS

Humanitarian missions and interventions are about saving lives, alleviating suffering and improving the socio-economic standing and well-being of affected or less advantaged communities or societies.

In providing humanitarian assistance during a disaster, emergency or crisis, common sense suggests that the effectiveness of the response is dependent on both timeliness and appropriateness. Access to the affected grounds and victims affects timeliness, while accuracy of information on the site, scope, severity and scale of the distressed, displaced, dead and devastation influences the appropriateness of response, which in turn affects the approach of and resource allocation for the intervention.

However, there is no universal application of common sense that works in uncommon settings and situations such as major crises, particularly across different continents, regions, societies and communities. Common sense is shaped by education, experience, exposure, precedence and preference. In this sense, common sense is not common. The prevailing COVID-19 crisis is one perfect illustration. Although the pandemic is a common lethal catastrophe that threatens and affects every society around the world, different countries take different approaches and measures to combat this common public health enemy.

Different societies and communities possess varying values due to their differing histories, geographies, terrains, legal systems, customs, characters, creeds and challenges, hence chiselling contrasting cultures and conceptions of life and lifestyle. In engaging foreign or non-native communities, it is imperative to understand mindsets, mannerisms, motivations and misconceptions. Cultural intelligence is key to catalyse and cultivate ground connection, comfort, confidence and collaboration.

Mounting Menaces and Key Challenges

Asia-Pacific is the most disaster-prone region across the globe. Since 1970s, 87% of persons affected by natural hazards around the world lived in Asia-Pacific (Alisjahbana, et al., 2021). Across the five regions of Asia – West, Central, South, East and Southeast – reside a plethora of ethnicities, religions, languages, administrative structures and systems, cultural beliefs, social customs and communal norms. Mounting natural menaces warrant multifaceted man-made measures and mechanisms. As resources are not unlimited, it is

critical that master-planning and coordinating teams possess relevant and real-world experience, sound ground network and cultural intelligence, practical solutioning skills, and pragmatic adaptability.

In any emergency, natural or man-made, timeliness of intervention is key to effective relief: saving lives, stabilising the situation, and preventing further deterioration of the crisis.

Four key challenges confront responders of major crises or conflicts: accessing severely and widely affected areas; retrieving data from affected grounds; and the overall coordination of the relief operations.

Challenge 1: Access to Affected Areas

Securing early access to affected areas and stranded communities allows for swift and timely intervention. More often, bad weather, rural terrain, water bodies, strewn debris, damaged roads and broken bridges are the obstacles. Moreover, access to affected areas provides crucial ground information for responders, coordinators and stakeholders. This is critical to determining what, how much and who are required at the affected locale. Needs vary at various affected areas. In major disasters such as the tsunami in Aceh, the super typhoons in Philippines and Myanmar, and the mega earthquakes of Muzaffarabad, Wenchuan and Gorkha, the devastated areas are usually widespread geographically, slowing the flow of information and speed of response.

Challenge 2: Obtaining Data from Affected Grounds

Ground information is key to ensuring that appropriate aid is deployed to avoid wasteful mobilisation of resources. With access and information, the coordination of relief resources is critical to maintaining the efficiency of resource allocation and effectiveness of intervention.

Challenge 3: Coordination of Relief Efforts

The key challenge in the coordination of relief efforts is keeping sight of the two priorities – timeliness and appropriateness.

Challenge 4: Cultural Intelligence

While risk identification, reduction and preparedness mould local communities' response and resilience to a disaster, foreign responders must not only bring in the necessary aid but also be adequately equipped with soft skills including personality, ethics and cultural intelligence to be able to weave in more seamlessly and effectively into the operations theatre.

CULTURAL INTELLIGENCE

Cultural intelligence is better illustrated by examples where it was lacking.

- In early 2002, a few months after the war in Afghanistan commenced, containers of clothes arrived; comprising printed tee-shirts and jeans, they were deemed inappropriate by many Afghans.

- After Aceh was shattered by the 2004 tsunami, energy bars, shortbread cookies and oat meals were distributed to the Acehnese when their obvious staples were rice and noodles.

- In the aftermath of the armed conflict in Sri Lanka (2009) and Sindh floods in Pakistan (2010), powdered milk was contributed by international donors to help ease hunger and malnutrition, when majority of South Asians are lactose-intolerant (Storhaug, 2017).

Some of these relief supplies were either barter-traded or re-directed elsewhere; most went to waste and were discarded. Given the increasing frequency and intensity of natural disasters in Asia, especially due to worsening climate change, and as resources are not unlimited, it is therefore essential, if not critical, that relief agencies or groups possess cultural intelligence or the understanding and ability to adapt to the ground needs based especially on local cultures, beliefs, diets and motivations of the beneficiaries.

Where there is food shortage, rice, being the region's food staple, is enthusiastically distributed but without clean water supply, utensils, crockeries and cutleries. In addressing infants' hunger and malnutrition, formula milk is often earnestly supplied without clean water supply and feeding bottles. During the usually chaotic and intense acute relief phase where the priority of relief intervention is to save lives and stabilise the situation, one

consideration is to explore options to avoid the massive logistics of onsite food preparations, waste management and possible contamination.

After many major disasters in the region, to address hydration and hygiene issues, bottled water is still the curious prescription for recent responses, even for hydrometeorological disasters. Airlifting them is costly and limited in quantity; subsequent land-transferring them poses an onerous logistical task – heavy trucks are usually at risk of being stranded due to broken bridges or small access routes due to strewn debris. Here, lightweight portable water treatment systems would be a better deployment option. More worryingly, the mountain of plastic waste left behind is comparable to rescuing current victims but concurrently harming their future generations.

Linked to the provision of safe water is the distribution of storage containers. The oft-used 20-litre hard-case storage carriers require massive trucking and the fully filled ones are heavy for elderly, young and female recipients to handle. In such cases, 10-litre collapsible and durable alternatives are more efficient for transporting to affected areas and more suitable for the receiving beneficiaries.

What is Cultural Intelligence?

Culture is the matrix of mindset, motivation, mission, mannerism, mechanism, morals and mantra of a group, community or society. These elements within the matrix are moulded by history, geography, ideology, climate, terrain, natural resources and challenges. Intelligence is the ability to acquire, analyse, adapt and apply facts or data appropriately. In short, cultural intelligence is cultural savviness, or possessing the shrewdness and practical knowledge to navigate through or accommodate specific cultures.

In the area of regional humanitarian assistance and disaster response (HADR), effective aid or response requires a good grasp and sensing of the cultures of local communities (survivors and partners alike) at the affected locations. Such knowledge helps facilitate cordial connections with local communities for constructive collaborations and effective interventions.

Intelligence when meshed with nurtured instincts allow for calculated anticipation of who to deploy and what relief items to dispatch. Knowing which critical resources to offer is the "passport" to getting the nod from local authorities in affected countries for early and priority access into ground zero.

Understanding what local communities consider to be common knowledge and good manners is thus good practice when endeavouring to do good in a crisis. As is accepting that what makes good sense to one group of people may not be common sense to another.

When Common Sense is Not Common

Kejawen: Javanese Geography of Influence (Mount Merapi Eruptions, 2006 & 2010, Yogyakarta, Indonesia)

Facts: Indonesia is Asia's southernmost island state and the world's largest island country with an abundance of history, natural resources and cultures, and unfortunately, natural disasters too. Regional humanitarian actors have dubbed Indonesia and the Philippines the "supermart" and "hypermart" of disasters respectively, due to the great variety of natural disasters that threaten and torment the two nations. One natural menace is Indonesia's Gunung Merapi or Mount Merapi, a stratovolcano located on the border between Central Java province and the Special Region of Yogyakarta.

In early June 2006, Merapi, as it had done regularly since the mid-16th century, erupted. There were two months of seismic activities, lava flow and four weeks of Red Alert status before the major eruption on 8 June 2006 which caused the lava dome of Merapi to crack and crumble. Team Singapore was already in the vicinity as they were earlier activated for the Bantul earthquake that struck the area two weeks earlier, where more than 5,700 lives were lost, and 200,000 houses destroyed (OCHA, 2006). The death toll from the Merapi eruption was low as most people had already been evacuated. Another eruption in late October 2010 resulted in 353 deaths while 350,000 were displaced (Djati, 2016); most of the damage was due to pyroclastic flows and the ensuing heavy rains which created lahars that slithered rapidly and forcefully down the mountain smashing into homes and swallowing farmlands. From the experienced gained from the 2006 relief response, Team Singapore had already been pre-positioned in Yogjakarta City since mid-October 2010 to help equip medical centres in

Mount Merapi eruption, 2010 – Team Singapore, which had pre-positioned in Yogyakarta, worked with local health authorities to equip healthcare facilities as part of risk preparedness and response

surrounding districts to serve the growing numbers of evacuees.

Cultural Insights: With a population of about 280 million, Indonesia is the world's fourth most populous country with over 1,000 ethnic groups, and the most populous Muslim-majority country. Java, the world's most populous island, is home to more than half of the country's population. Since Indonesia's independence in 1949, all her Presidents have been of Javanese ethnicity. To better understand and relate to Indonesians, it is important to appreciate the core and key elements influencing cultural traits.

Merapi lies 28 kilometres north of Yogyakarta City on the island of Java, where the royal palace sits. The Special Region of Yogyakarta is an autonomous province that, unlike the other 33 Indonesian provinces, does not elect its governor. It is ruled by the Yogyakarta Sultanate that is the only officially recognised monarchy within the government of Indonesia. Why is Yogyakarta accorded the uncommon treatment by democratic Indonesia?

Merapi is more than an ordinary volcanic mountain because of its position and significance in the cosmic order of the Javanese traditional and mystical worldview. It lies at the northern tip of the mystical longitudinal meridian of sacral power in central Java that stretches from the mountain through the *Kraton* (royal court of the Sultan) of Yogyakarta to the beach of Parangtritis – home of Kiayi Loro Ratu Kidul, spirit queen of the South Seas (Indian Ocean).

The mountain is deemed spiritually potent, to which sultans and presidents journey in search of wahyu, the guiding light of spiritual strength from the Almighty. The Sultan has a special servant called the *Gatekeeper* of Merapi, whose official duty is to manage the annual offerings of the *Kraton* to the mountain. Akin to royal succession, the gatekeeper's position is hereditary. His unofficial yet most significant duty is to help ensure the safety of the *Kraton* from the menaces of Merapi, which before 2010 was showing signs of directional change of lava flow, from southwest to south i.e. towards Yogyakarta City where the *Kraton* is located.

In the aftermath of the 2010 eruptions, local authorities found the body of the then Gatekeeper, Mbah Maridjan, lying in prostration in the direction of the sacred meridian that links Merapi to the *Kraton* and to Ratu Kidul's abode. Many Javanese viewed him as the gracious Gatekeeper who discharged his spiritual duty till his last breath. Like Mbah Maridjan, many Javanese, old and young, consciously or otherwise, subscribe to ***Kejawen***, a Javanese worldview or belief system based on the search for inner harmony and connectivity between the temporal and spiritual worlds, and where syncretism in all aspects of life is attainable, even that which is seemingly in conflict.

Kejawen sits well with the country's national motto, *Bhinneka Tunggal Ika* (Unity in Diversity), where Indonesia maintains a narrative of a culturally plural but unified nation. Interestingly, *Kejawen* has significant similarities with the Japanese concept of *Wabi Sabi*: the awareness of natural forces, acceptance and appreciation of power of nature and abandonment of dualism – the belief that humans are separate from their surroundings.

These are worldviews and belief systems that not everyone is expected to subscribe to, but being aware of their significance to the local community, and how they may affect interactions between relief personnel and those they seek to help may ensure greater efficacy in delivering aid. For example, given Indonesia's Muslim-majority and Javanese-centric setting, it would be useful to avoid scheduling meetings during daily prayer times or on Friday afternoons.

Finally, Javanese are renowned for their subtlety or indirectness. They are generally non-confrontational. Like Japanese indirectness, it is based on politeness and addressing issues in a manner that the person is not offended and avoiding hints of criticism, pointing out mistakes or mentioning anything the other person might be sensitive about (Meres,

1998; Nadar, 2007). Many a time, when foreign aid responders make a proposal or suggestion, the general immediate response from a Javanese or Indonesian would be a 'Yes', although it is more of an acknowledgement rather than in agreement!

Ganbatte: Japanese Resilience
Great Tōhoku Earthquake and Tsunami, 2011, Tohoku, Japan

Facts: In the afternoon of 11 March 2011, a magnitude 9.0 undersea earthquake struck off Japan's east coast, triggering a tsunami that travelled at 700km/h, towering at 40 metres, penetrating 10 kilometres inland, killing almost 20,000 lives (FDMA, 2021), displacing over 400,000 survivors (JRC, 2013) causing devastation across 500km2 of land and crippling the Fukushima nuclear reactors, making it a complex humanitarian crisis. According to Keller and DeVecchion (2016), the earthquake released "about 600 million times more energy than the atomic bomb dropped on Hiroshima at the end of World War II".

Team Singapore arrived at Morioka in Japan's north-eastern Tōhoku region on 14 March to serve the three worst-affected prefectures of Iwate, Miyagi and Fukushima. Amidst the snowfall and sub-zero temperatures, the team collaborated closely with the Japan Self Defence Force, Japan Mine Action Service and Soka Gakkai International across the acute relief and recovery phases over the subsequent 10 months.

Destruction was extremely widespread and devastating, akin to, if not worse than Aceh in the aftermath of the Indian Ocean tsunami. But unlike Aceh, huge concrete breakwaters, which formed Japan's coastal defence, were found strewn like Lego blocks along the shoreline. Large ships and houses were left stranded on these breakwaters. The sight

Great Tohoku tsunami, Japan, 2011 – Houses and sea vessels were left stranded by the receding waves which were as powerful as the incoming force.

was unworldly and eerie. One could never imagine the horror images replaying in the minds of the survivors.

Cultural Insights: What was shocking then turned into something stunning. Each of the designated evacuation centres – an indoor sports stadium – sheltered 4,000-6,000 evacuees. They arranged themselves in exceptionally orderly and tidy fashion. The toilets which were used for relieving, bathing and washing were kept dry and without any stench. At the corners of the parameter corridors, carton boxes were placed by the evacuees for their waste disposal. The boxes were recycled from the packaging of incoming relief supplies and arranged in a manner that allowed for waste sorting – general trash, plastics, papers and metals. Interestingly, that was only the third day after the colossal tsunami struck. At a food and household kit distribution organised by the Singapore team, while four lanes were created to facilitate an orderly and expeditious collection, the people used only three of the lanes, voluntarily leaving the fourth for the elderly and physically disadvantaged.

Throughout the relief and rehabilitation efforts in Tohoku, the team heard during their exchanges with the locals and noticed on many posters one word – ***Ganbatte***.

Ganbatte is often translated as "good luck" or "do your best". But in reality, *Ganbatte* is more than a term. It is something ingrained in the Japanese people – a combination of soul, spirit and sentiment that is cultivated and cultured into their character, or perhaps even their DNA. This mindset, spirit or character is the very essence and foundation of the Japanese people's resilience, and the strength of its social fabric applicable to both daily routines and

extraordinary crises. The closest translation of the term would perhaps be "persevere regardless".

The *Ganbatte* spirit of the tsunami survivors in Tohoku witnessed by Team Singapore was a priceless education for disaster-prone communities and humanitarian responders on the great importance of risk preparedness and response, in terms of systems and social mindset and spiritedness. Reducing risks and increasing preparedness help enhance resilience. Local authorities and international humanitarian actors should consciously, structurally and continuously engage and support disaster-prone communities during peacetime, though less sexier and less limelight compared to acute disaster relief interventions, to help mitigate menaces and equip them with appropriate resources and readiness, so as to empower them to better respond, cope and recover when a major disaster occurs.

Juche: Piety, Loyalty (Pacific typhoon season, 2012, North Korea)

Facts: Across June and August 2012, the Democratic People's Republic of Korea (DPRK) was battered by persistent rains and three typhoons – Khanun, Bolaven and Saola – causing massive destruction, widespread floods and numerous landslides. That year's Pacific typhoon season was an exceptionally destructive one.

On 4 August, the authorities announced the death toll had risen to 169, with around 400 others missing. Over 8,000 houses were inundated while 44,000 homes damaged by the floods, leaving more than 200,000 people displaced. Damaged infrastructure including broken bridges and roads slowed down aid efforts and supplies reaching the victims. The United Nations and International Committee of the Red Cross sent assessment teams to the worst-hit areas and found that people were in dire need of clean drinking water, food and other basic essentials.

Pacific typhoon season, North Korea, 2012 – Team Singapore delivered and deployed manual-powered water filtration systems and ready meals across Wŏnsan, Onch'ŏn, and Yonggang counties.

More worryingly, about 30,000 hectares of farmlands, with substantial parts ready for harvest, were fully submerged. Local residents and officials said that they had never experienced floods of such scale and force in their entire lives. For a country often hit by floods and famines, the substantial losses of agricultural produce posed a chronically acute challenge to the people's lives, livelihoods and fortitude.

Upon the direct request from the DPRK Foreign Office in early August, Team Singapore dispatched two deployments to Pyongyang, along with two relief containers of water filtration systems and ready-to-eat meals. Partnering the DPRK Ministry of Foreign Affairs and the county authorities, they distributed the aid supplies which included locally procured fresh fruit, milk, bread, hygiene kits and tarpaulins to evacuees across the counties of Wŏnsan, Onch'ŏn, and Yonggang. The team collaborated with the Nampo City Disaster Prevention & Reconstruction Agency for the reconstruction of the Edong bridge in Yonggang County to help reconnect more than 8,000 residents living on both sides of the bridge.

To better understand the country's flood mitigation and water and irrigation management systems, the team visited the epic 8-kilometre long West Sea Barrage which divides the West Sea from the Taedong River to increase and improve agricultural output, fresh water supply and trade.

Cultural Insights: This was the first Pacific typhoon season (annually from May to October) experienced by North Koreans since the passing of their second Supreme Leader Kim Jong-Il on 17 December 2011. Two days after Boxing Day, the world witnessed the most tearful funeral ever in modern times. Koreans thronged the streets weeping and wailing as the cortege of their late leader passed by en route to the Kumsusan Memorial Palace (Taylor, 2011).

Many foreign media and publications debated the genuineness of the people's grief (Park, 2011; Peyron, 2011). To the secular and capitalist societies, the tears were of fear rather than of sorrow. If that was not a well-scripted and flawlessly executed performance

by the 25 million population, what then could be the people's connection or attachment to their leader?

North Koreans subscribe to ***Juche***, a state ideology or belief system developed by Kim Il Sung in the 1950s and later promoted by his son and successor, Kim Jong-Il. *Juche* basically connotes sovereignty and self-reliance. Having lived under harsh foreign rule of imperialist Japan from 1930-1945, followed by the Korean War of 1950-1953, North Koreans were ready to be led by a native leader espousing a nationalist creed that resembles the Confucianist belief in a natural hierarchical system based on the values of respect, piety and loyalty – family to the father, nation to the leader. *Juche* also emphasises the spiritual needs of the people by underlining the communal nature of human beings. This is continuously, structurally and religiously drummed into every child since pre-school. Hence, the demise of the leader is akin to losing a father of the common big sovereign family.

Team Singapore's experience with the local communities and authorities was not a reflection of the narratives that had been portrayed of their traditions, belief and value system. The key takeaway from the two relief missions to DPRK was to conduct extensive and unrestrictive fact-finding (from both western and eastern sources) prior to the deployment of manpower and resources, and to reserve judgement of local authorities and communities who could potentially be valuable local relief partners. A skewed or prejudiced mindset, based on ignorance, indifference or biases, would hinder cordial and constructive collaborations, hence less than effective intervention.

CONCLUDING THOUGHTS

In major disaster relief efforts that require regional or international aid, foreign actors must serve with sincere compassion, provide constructive and appropriate support, and consciously exercise cultural savviness. They must cultivate the art of listening and learning, and refrain from depending on hearsay information. It is important to mingle directly with the affected communities to understand them and their real needs. To plug effectively into the local landscape and operate smoothly, crisis responders must appreciate the significance and value of cultural intelligence - understanding and adapting to the affected community's mindsets, concerns, comfort zones, motivations and mannerisms. In short, their respective and unique cultures.

Regional humanitarian assistance is about dealing with fellow humans who are in agony and administrative systems that have been overwhelmed. In major crises, communities are hit by destruction, death, displacement, distress, despair and desperation, while authorities are hampered or handicapped by the disruption of their local systems and services. More often than not, foreign relief actors have the tendency to be over-zealous and demanding of local authorities to provide them a significant role in the overall scheme of relief operations, when they should be avoiding adding unnecessary or further burden on the already-strained systems. Even if the local agencies and partners clearly lack the requisites to take control of or coordinate the situation, it is crucial to influence and guide them through empathy and diplomacy, instead of imposing superiority. And while timeliness of response is one of the key elements to effective intervention, efficiency alone does not naturally or necessarily ensure effectiveness.

Military forces, known for their readiness and efficiency, usually possess the necessary equipment and discipline. But most militaries are usually unwilling to mobilise their assets under the control of foreign civilian authorities and alongside other relief agencies. Generally, humanitarian relief is a civilian affair. Many militaries have incorporated non-traditional security, including humanitarian assistance and disaster response, into their mandate and capability. However, interoperability between the two different structures and systems needs to be organised and synchronised to optimise their respective comparative advantage without co-opting them, while accommodating their different cultures, values and approaches.

It is crucial that during trying times, humanitarian actors fully embrace and operationalise the four cardinal principles of humanitarian service – humanity, impartiality, neutrality and sovereignty. The fundamental point is to be aware of their primary role, i.e. playing a useful and mindful function supporting local authorities, agencies and communities of the affected nation.

There is no space for heroes or egos in this arena, only agents of hope, and humanitarian actors must consciously and carefully navigate away from engaging in or being dragged into the politics of hope, local or international.

Effective relief intervention means serving well while observing and enhancing goodwill. Ignorance, indifference or arrogance could do more harm than the intended good.

ABOUT THE AUTHOR

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is a practising regional humanitarian servant and local civic catalyst, who held senior management positions across private and people sectors. He is the managing founder of QM which advises, develops and drives practical programmes for social and civic action, disaster management, community resilience and corporate sustainability. Hassan also helms Aquayana, a water solutioning and innovation social enterprise focusing on vulnerabilities and requirements of rural, coastal and disaster-prone communities. He sits as Special Advisor to a unique regional humanitarian interfaith non-profit – Humanity Matters. His immediate past corporate appointment was Director of Sustainability & Corporate Affairs with HSL Constructor, a marine and civil engineering outfit.

From 2001–2016, Hassan conceptualised, operationalised and spearheaded three regional humanitarian organisations – Mercy Relief, Lien Aid and Corporate Citizen Foundation. His extensive field experience includes planning, coordinating and leading Singaporean relief missions, involving cross-sector and civil-military cooperation, across 25 Asian countries and territories, extending aid of over SGD35 million. These comprised sustainable community development and risk mitigation programmes focusing on water; sanitation; shelter; livelihood, healthcare and education. He now uses this experience to manage relief missions for Humanity Matters, including the delivery of critical medical supplies to neighbouring countries during the ongoing COVID-19 pandemic.

In 2007, Hassan completed a UNOCHA policy review with the Stockholm International Peace Research Institute titled the "Effectiveness of Foreign Military Assets in Natural Disasters". He also headed various original analyses for UN-endorsed publications, namely for UNIDRC, WHO, UNESCO, UNISDR and UNDESA on sustainable development and risks management. Hassan designed, developed and delivered an original diploma-certificate in Humanitarian Affairs at the Singapore Polytechnic from 2009–2013. He initiated and implemented the ASEAN Young Professionals Volunteer Corps regional programme for Negara Brunei Darussalam in 2013. In 2011 and 2016, he was invited to speak at the Institute of Policy Studies' annual flagship convention, Singapore Perspectives, on his first-hand humanitarian and interfaith experiences relevant to the enhancement of the Singaporean society.

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UNDERSTANDING THE PSYCHOLOGY AND SUSCEPTIBILITY OF SINGAPOREANS TO FOREIGN INTERFERENCE

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ABSTRACT

The Singapore Government introduced the Foreign Interference (Countermeasures) Bill (FICA) on 4 October 2021 to prevent, detect and disrupt foreign interference in domestic politics. As acts of online foreign interference are becoming increasingly common globally, it is important to have a better grasp of the general contours of foreign interference as it applies to Singapore. This paper will thus examine the issues that make Singapore more vulnerable to foreign interference, as well as the typical psychological principles underlying the commonly used tactics of hostile foreign entities in informational warfare.

THE THREAT OF FOREIGN INTERFERENCE

Foreign interference occurs when foreign actors or their proxies engage in conduct that is covert, deceptive and against the target state's national interests (Dowling, 2021). It aims to advance the interfering state's national interests at the expense of the targeted state (Cheong et al., 2020). Importantly, acts of online foreign interference have become increasingly common. The National Intelligence Council (2021) found the 2020 presidential election in the United States rife with attempts at online foreign interference aimed at denigrating US President Joe Biden's candidacy. These efforts included Russian-linked organisations forwarding misleading or unsubstantiated claims about President Biden to US media organisations, officials and prominent individuals. Such persistent Russian cyber efforts were less apparent in the 2016 elections, indicating a rise in online foreign interference attempts in recent years (National Intelligence Council, 2021).

The threat of foreign interference has prompted countries around the world to implement countermeasures. Australia, for instance, passed a foreign interference law in 2018 in response to foreign powers reputedly making unprecedented and increasingly sophisticated attempts to influence domestic and international political processes. The law targets foreign interference in politics and other domestic affairs through key provisions, including requiring lobbyists for foreign governments to identify themselves on a public register ("Australia passes foreign interference laws", 2018). A foreign interference bill was also recently passed in Singapore. It seeks to protect the integrity of Singapore's domestic politics by pre-empting the occurrence of foreign interference involving politically significant persons, while seeking to protect the wider public from being unduly influenced by hostile foreign agents via electronic communications activities (Foreign Interference (Countermeasures) Bill, 2021).

Although the methods and risks of influencing the political leadership of a state are well known, less is known about the issue of influencing the citizenry in the context of today's highly interconnected society. This article thus

explores two key areas: the pressure points inherent in Singapore's society which are easy targets for hostile agents, and the psychological mechanisms driving the effectiveness of online foreign interference campaigns. The implications of these findings will also be discussed.

The Threat to Singapore

It is well-known that while Singapore believes in friendly relations with all states, the ultimate objectives of its foreign policy are first, to protect its independence and sovereignty, and second, to expand opportunities for its citizens to "overcome its geographic limits", and precisely because it is a small state, it must "stand up and be counted" on issues where its national interests are at stake (Balakrishnan, 2017). The fact that Singapore wields some influence on the international stage means that strategic advantages could be obtained if foreign states successfully influenced local socio-political sentiments in their favour (Abdul Rahman, 2019). Foreign interference thus poses a very real threat to Singapore as it could distort internal decision-making in ways which are detrimental to its national interests.

Instances of foreign interference have been documented since Singapore's independence. One historical example of this was when the now-defunct Eastern Sun newspaper was used to garner support for a foreign state in exchange for funding (Ong & Zhang, 2021). The funding was contingent on the newspaper publishing news items of the foreign state actor's choice and not mounting opposition to major issues concerning the state of interest. The newspaper folded in 1971 after its source of funding was revealed (Cheong et al., 2020).

Current methods of foreign interference are drastically different. In traditional offline environments, influencing the wider population would either entail controlling news outlets or recruiting proxies to infiltrate various segments of society to canvass in-person support. However, the rise of information and communications technologies means that it is easier, cheaper and more effective to target the general population online. Since foreign interference tactics will evolve with technological development, Singapore will likely grow increasingly vulnerable to online attacks in an interconnected global landscape.

This article thus offers a behavioural sciences perspective on how hostile actors could take advantage of the online environment to exploit social fault lines and inherent psychological mechanisms. It will also look at areas of vulnerability specific to Singapore, which could be leveraged by foreign agents to drive societal discourse to advance their aims.

WHAT MAKES SINGAPORE VULNERABLE?

Potential fault-lines in Singapore's multiracial and multi-religious society could be exploited as vectors of foreign interference. Mr. K Shanmugam, Minister for Home Affairs and Minister for Law, alluded to this when he said that the "racial and religious mix [of Singapore] is easily exploitable by different countries" (Shanmugam, 2021). When the Home Team Behavioural Sciences Centre (HTBSC) investigated polarising pressure points in Singapore society, it found that race and religion could indeed be used to create societal cleavages. More specifically, the study examined posts and the emotions directed toward various entities on four alternative media Facebook pages between January 2019 and May 2021. This study used emotions as a proxy for measuring polarisation since one known strategy of informational warfare is to pit groups against each other using highly negative discourse (Arif et al., 2018; Huang et al., 2021; Pomerantsev & Weiss, 2014). The relevant results are illustrated in Figure 1.

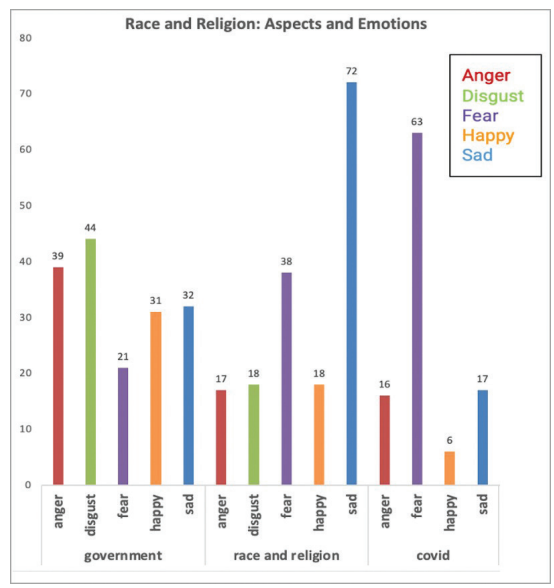

Figure 1: Analysis of Social Media Posts on Race and Religion and the Emotions Directed Towards the Top Three Most Common Aspects in These Posts.

Machine learning techniques were used to identify the emotions towards aspects (e.g., government) in the posts. The emotion categories were taken from Ekman's model of emotions (1999) and the aspects were derived from references to relevant entities within the posts. The study found elevated emotional sentiments online in several categories. A close read of the posts found that disgust was directed towards the government's handling of racial and religious issues. Next, sadness was expressed over the state of racial and religious matters in Singapore (e.g., lamenting the cases of alleged discrimination against minorities in Singapore). Third, fear was expressed in discussions about the closure of Singapore's borders to countries such as India in 2020 due to COVID-19. In all these aspects, negative emotions were predominantly expressed.

Since hostile information campaigns also exploit emotional topics to intensify societal divisions (Arif et al., 2018; Pomerantsev & Weiss, 2014), these online displays of negative emotions surrounding racial and religious issues could signal the presence of weaknesses in the social fabric and become actionable intelligence for hostile foreign actors to target. While foreign interference can exploit multiple issues such as political divisions or topical subjects such as COVID-19, the issues of multiracialism and multi-religiosity will be further examined in light of the fact that they form the backdrop to Singapore society.

Multiracialism and the Issue of Racism

Local research indicates that racism is a growing area of concern, with notable differences observed between the ethnic majority and ethnic minorities in their opinions and experiences of racial incidents (Mathews et al., 2019b). A comparison with data collected from 2013 revealed a small rise in perceptions of racial discrimination in the workplace by racial minorities. Moreover, a sizable difference remained in inter-racial trust amidst crises, with more than a 10% gap between respondents trusting an individual of a majority Chinese race versus an individual of a racial minority (Mathews et al., 2019b). These suggest that racism may have persisted or even worsened over the span of five years, especially against ethnic minorities in Singapore.

Precipitating events may also exacerbate racial divisions. For example, the Comprehensive Economic Cooperation Agreement (CECA) and the spread of the Delta variant of COVID-19 coincided with a rise in racially motivated incidents targeting the Indian community in Singapore. Such incidents took the form of online hate posts on various websites and social media channels, even escalating to physical violence (Jacob, 2021; Mohan, 2021; Sin, 2021). A HTBSC case study on online derogatory comments about Indian expatriates in Singapore found that racial divides could have deepened (Yuan et al., 2021). The study examined data from Facebook groups that frequently featured anti-Singapore-India CECA views and found commonly occurring narratives revealing netizen's perceptions that Indian expatriates posed both realistic and symbolic threats – Indian expatriates were believed by these netizens to be favoured at the expense of locals in job opportunities and salaries (realistic threat), and their culture was viewed as less desirable and encroaching upon and replacing the local culture (symbolic threat). These negative sentiments expressed against Indian expatriates in Singapore were damaging and spilled over to ethnic Indian communities as a whole, who were incorrectly deemed as foreign.

Multi-Religiosity and Openness to Foreign Narratives

Besides multiracialism, the multi-religiosity and openness of Singapore could be another pressure point. Singapore was ranked the most religiously diverse country amongst 232 countries surveyed by Pew Research Centre (2014). This finding hints at how greater divisions could form amongst the populace, especially in light of the fact that a significant proportion of Singaporeans expressed an openness to foreign narratives concerning religious matters (Mathews et al., 2019a). Slightly more than a quarter of Singapore respondents reported being open to religious extremists publishing their views on the internet or social media, with younger respondents being more open to this – nearly 46% of those between 18 to 25 years old indicated that they would accept the publication of extremist views labelling all other religions as enemies (Mathews et al., 2019a). This openness to the airing of religious extremist views online indicates that hostile messages targeting specific religious groups would be deemed permissible by a sizable proportion of the population. Such views painting all other religions as enemies could weaken social cohesion, and could eventually manifest in the subversion of domestic politics (Cheong et al., 2020).

This is supported by a HTBSC study conducted by Foong et al. (2021) among Singaporean youth, which

highlighted how openness to foreign narratives could set the stage for an infiltration of foreign narratives to cross over into the realm of foreign interference. In this study, Singaporean youth responded to a survey, with the results showing that more than half of the respondents were open to alternative perspectives from foreigners that could influence domestic public opinion on social issues in Singapore (e.g., identity and racial issues). Respondents also did not believe that foreigners are motivated to weaken Singapore's social cohesion; most either strongly disagreed (4.0%), disagreed (20.0%), or were unsure (36.8%) that this could be a root cause of foreigners sharing their views on local politics. This again shows the potential route that foreign influence could take – what may appear as the mere expression of "alternative" views by foreigners could be deemed by the citizenry as something that should be permitted to influence domestic public opinion.

With a better understanding of the racial and religious pressure points of Singapore's society, attention will now be turned to the psychological and behavioural mechanisms that hostile actors can exploit via online platforms to further their agenda.

PSYCHOLOGICAL AND BEHAVIOURAL MECHANISMS

Hostile agents exploit multiple psychological mechanisms to influence the citizenry, and the current informational environment greatly enhances the effectiveness of these tactics. This section examines five psychological mechanisms – group dynamics, sensationalism, confirmation bias, belief bias, and the illusory truth effect – and shows how hostile agents have combined these mechanisms with the use of online communications to effectively manipulate public opinion. Their applicability to the aforementioned pressure points in the Singapore context will also be examined.

1. Group Dynamics

Hostile foreign agents aiming to undermine a target state's stability will often exploit group dynamics, either to propagate a particular narrative or to pit different groups against each other. This is effective due to two inherent psychological biases: the ingroup bias and the outgroup bias (Tajfel, 1982). The ingroup bias is the tendency for people to favour those perceived to be in the same group as them (Brewer, 1979). Ingroup members are generally viewed more positively, trusted more easily and treated better. Conversely, the outgroup bias occurs when those perceived to be external to the group are viewed as less trustworthy and treated worse (Struch & Schwartz, 1989).

To gain the trust of one target group, hostile agents can present themselves as belonging to that group. Once they have been accepted as part of the group, the ingroup bias increases the trust that the group has in them, thereby increasing the likelihood of the group being influenced by their messages and narratives.

Without online technologies, hostile agents or proxies would have to be a part of a social group to be accepted by it (Scheepers et al., 2006). For example, to be accepted as part of a racial group, individuals have to actually belong to that race. However, technology allows individuals to easily assume alternate online identities (Fox & Ahn, 2013; Hasler et al., 2017). Hostile agents can thus use false identities to embed themselves within online networks to gain ingroup status. This can be achieved in multiple ways: creating fake online personas mimicking the target group's profile, buying or hacking existing accounts belonging to members of the target profile, co-opting local proxies from the target group to spread the messages, or even creating inauthentic accounts impersonating the identities of real people or organisations (Martin & Shapiro, 2019).

Conversely, hostile agents can exploit the outgroup bias by spreading negative narratives against targeted outgroups. An inherent bias against outgroups, exacerbated by false or misleading information, can inflame societal tensions.

Recent research has shown how the Internet Research Agency (IRA), an organisation linked to Russian state actors, leveraged these biases to destabilise American society (Freelon & Lokot, 2020). Dawson & Innes (2019) documented how an account identified as belonging to the IRA, @SouthLoneStar, clearly mimicked the target ingroup of conservative white Americans. The account's bio was self-described as belonging to a "Proud TEXAN and AMERICAN patriot", and other indicators similarly pointed to it being run by a conservative white male (e.g., a profile picture of a Caucasian male wearing a cowboy hat and a tagged location of "Texas, USA").

Crafting this account to look like part of the "ingroup" of conservative white voters made it easier for the account to gain the trust of other conservative white Americans, which then made it easier to promote narratives in the IRA's interest. This included attempts to undermine social cohesion by spreading negative narratives against Muslims, who were the targeted outgroup (Hern, 2017). The account gained more than 16,500 followers before it was identified and suspended ("How Russian Bots Appear In", 2017b), thus testifying to the disproportionate influence that such bogus accounts can wield.

The implications for Singapore's online social discourse are obvious: hostile actors can don false personas to incite animosity amongst racial and religious groups in Singapore. Alternatively, hostile actors can utilise the anonymity afforded by online platforms and tap on the audience's presumption that comments on local forums are left by fellow Singaporeans. As Minister Shanmugam has noted, online news sites featuring anonymous writers have been "used by foreign countries to attack and deepen divisions" globally, including in Singapore: a writer for a local website, The Online Citizen, was revealed to be a Malaysian who used a pen name to publish articles concerning domestic issues. Mr Shanmugam noted the likelihood that most readers would have assumed that the articles were written by a genuine Singaporean contributor (Shanmugam, 2019).

2. Sensationalism

Humans generally have a strong interest in sensational stories and a desire to share them with others. From the perspective of evolutionary psychology, an alarming news item tends to spread further and faster because it concerns the survival of the group (Davis & McLeod, 2003). Sharing such news satisfies the need for environmental surveillance and social involvement – in doing so, individuals feel like they are helping to inform and protect their ingroup from possible dangers (Davis & McLeod, 2003).

However, the rise of social media and alternative news sites have made it much easier for fake news and misdirected arguments to be posted with sensational headlines to attract attention and arouse strong emotions. Images and videos can be taken out of context or doctored to contribute to the supposed evidence supporting the promoted narrative, and deepfakes can also be used to completely fabricate events (Schwartz, 2018). It can be difficult for today's average news consumer to sift out legitimate news from fake news, but the general instinct to spread such information remains.

Hostile agents thus exploit this to great effect. After embedding themselves in a network, they can post sensational and inflammatory information, leveraging others within the network to spread the news. Thus, instead of hostile actors having to invest significant amounts of time and energy to canvass support for their views, the audience is co-opted and becomes unwitting and active participants in the spreading of fake news (Wanless & Berk, 2019).

For example, the safety of COVID-19 mRNA vaccines was called into question when reports were circulated on social media about the deaths of a group of elderly Norwegians who received the Pfizer vaccine ("Fact Check: Discussion of Deaths", 2021). The information was taken out of context and did not account for baseline elderly death rates. The misleading information was propagated by news outlets and accounts linked to Chinese national mouthpieces (Wang, 2021), which called for the suspension of the Pfizer vaccines over safety concerns while persuading readers of the relative safety of Chinese-made vaccines (Zhang, 2021). This and other similar types of news were further spread by concerned individuals on social media, resulting in increases in negative sentiments expressed against the Pfizer vaccine (Bogle & Zhang, 2021). The public's fears for their own safety were thus used to co-opt them into sharing sensational negative news about mRNA vaccines to alter public perceptions.

In Singapore's context, sensationalised or fake news along racial or religious lines could erode societal harmony. As Singaporeans have expressed an openness to potentially incendiary religious views being expressed in online spaces (Mathews et al., 2019a), there is a danger of hostile actors deliberately spreading sensationalised news and views painting people from other religions as "enemies", using doctored "evidence" to support their cause while facing minimal resistance in the process. This is a cause for concern as hate comments about "outgroups" – fabricated or otherwise – will beget more genuine hate, with netizens being more likely to respond to hate speech with similar hateful or negative sentiments (Yuan et al., 2021).

3. Confirmation Bias

Hostile agents can also exploit confirmation bias, which is the tendency for people to seek out, remember and interpret information in ways that support their existing (and possibly biased) views, while discounting information that appears to contradict them. High levels of exposure to similar information will strengthen one's opinions even if they are inaccurate, and low-level exposure to alternative viewpoints may not be enough to counter the error (Johnson, 2018).

While people have always favoured information aligned with their views even in offline environments, the current social media environment exacerbates the effects of confirmation bias. For example, people generally follow other accounts they agree with; interest groups can be used to share information with like-minded people; and algorithmic recommendations result in people seeing posts tailored to their demographic profile and preferences (Geschke et al., 2019). Social media thus facilitates the creation of echo chambers, which encourage the radicalisation of existing views through constant interaction with more of the same types of information and reduced exposure to contradicting information (Cinelli et al., 2021; Quattrociocchi et al., 2016).

Hostile agents thus utilise social media's propensity to encourage confirmation bias to facilitate the entrenchment of their narratives. The IRA previously used this method to deepen the divide between America's political left and right. As people tend to follow accounts which post information they agree with, left-leaning accounts will tend to form their own network interacting with other left-leaning accounts, likewise for right-leaning accounts. This results in low baseline interactions between left- and right-leaning networks. An analysis of IRA-linked Twitter accounts revealed that hostile agents had infiltrated both sides of the divide and were boosting tweets within their respective left- and right-leaning networks (Starbird, 2018), thus increasing the toxicity surrounding discussions (Arif et al., 2018). Individuals' respective viewpoints were strengthened by the increased visibility of corroborating information, while the intrinsically low interaction between left- and right-leaning accounts meant that users seldom encountered opposing information. As these groups were exposed to completely different information, tensions were bound to escalate, with each side becoming increasingly convinced that the other was deliberately ignoring facts.

There is a similar danger of this tactic being employed by hostile actors against Singapore. If misleading information is spread and amplified within groups, momentum for counterproductive narratives can be built and sympathisers can be attracted to the cause. Further interaction with similar information can lead to entrenched polarisation in Singapore society.

4. Belief Bias

While confirmation bias focuses on information, belief bias focuses on arguments and conclusions. It occurs when people are more willing to accept arguments when the supporting points and resulting conclusions are aligned with their pre-existing beliefs, even if the underlying logic is flawed (Evans et al., 1993). Conversely, people may reject logical arguments with true conclusions if they are not aligned with pre-existing beliefs. Information which has been filtered through the confirmation bias can be used to support these arguments. This bias can thus be used to encourage the uncritical acceptance of lines of reasoning which are crafted to be in alignment with pre-existing beliefs (Calvillo et al., 2020).

For example, Russian-linked operators fanned the flames of social unrest in America by amplifying certain arguments directed at conservative Christians. One widely accepted narrative amongst American Christian nationalists is that America's "Christian heritage" has to be defended against threats, one of which is the rise of Islamic culture (Whitehead et al., 2018). Arguments consistent with this view will hence resonate more with this group. According to BBC News, paid advertisements on Facebook were used to target this demographic, promoting arguments such as "Sharia law should not even be debatable. You cannot enter a foreign country and set up your own set of laws and regulations that contradict most of the worlds [sic] moral stands [sic]" (2017). These posts were designed to deliberately stoke tensions between different religious groups, even though there was no danger of Sharia law being implemented in America.

Such arguments along racial or religious lines can easily be propagated by hostile actors against Singapore. As seen in the rise of racism amidst the spread of the Delta variant of COVID-19 and

CECA, Indian foreign nationals were believed to be a threat to locals. Hostile agents could leverage such existing beliefs to push divisive narratives aimed at undermining the social fabric of Singapore.

5. Illusory Truth

The illusory truth effect is the tendency for people to believe false information after repeated exposure. As long as a small chance of plausibility exists, repetition can increase the perceived accuracy of a statement (Fazio et al., 2019). This susceptibility exists even when warnings are given about the inaccuracy of the news (Pennycook et al., 2018). While prior knowledge of the truth can be protective, it is not always foolproof (Fazio et al., 2015).

Biased opinions and fake news can thus be repeated often enough to eventually become ingrained in the minds of target groups and gain credibility (De keersmaecker et al., 2020). Hence, it is not even necessary for hostile agents to create new falsehoods. Foreign interference can build on the repetition and propagation of existing fake news to sow doubt and discord, thus furthering their cause.

For example, the conspiracy theory called "QAnon" gained a lot of traction in the period leading up to the 2020 US presidential election. The theory claimed, among other things, that the Democrats and some celebrities were running a child sex trafficking ring and that only Donald Trump could stop them (Collins, 2018; Spring, 2020). Despite the lack of evidence for this outlandish claim, it gained increasingly wider acceptance and eventually became influential enough to affect segments of the voting population (Spring, 2020). Although the conspiracy theory likely started within America, Russian-linked accounts had actively boosted and repeated this narrative to make it gain more visibility and credence (Collins & Murphy, 2019). Hostile agents can thus opportunistically repurpose existing fake news, repeating it over time to increase the impression of legitimacy.

In Singapore's context, this could mean that repeating arguments that certain religious groups are enemies or certain racial groups are threats could eventually lead to these statements being taken as the truth.

IMPLICATIONS

It is clear that hostile actors can attempt to interfere in a state by dividing and conquering. It is thus crucial that authorities act to foster cohesion and avoid the fragmentation of the citizenry into ethnic and religious groups. Several suggestions are offered to address this.

1. Emphasise the Singaporean Identity

As intergroup dynamics can be used to pit groups against each other, it is important to build a more cohesive national narrative (Sherif, 1988). A collective Singaporean identity should be emphasised from youth to show that there is more that unites us than divides us. The presence of a strong national identity will increase the likelihood of Singaporeans viewing each other as the ingroup despite differences in race, religion or opinion, thus reducing the danger of tensions caused by in- and outgroup biases.

In addition, platforms should be created for the open but respectful discussion of racial and religious issues. This increases the opportunities for counternarratives to be aired, thus reducing the likelihood of confirmation bias taking hold. Existing programmes that strengthen Singapore's social cohesion, such as Faithful Footprints and SG Core, could aid in this as they aim to educate Singaporeans about harmonious multiculturalism and help citizens appreciate each other's differences (Temasek Foundation, 2021, n.d.).

2. Address Contentious Issues Quickly and Decisively

As foreign interference can occur via the dissemination of sensationalised news, it is important that government agencies or fact-checking organisations address issues quickly to curb the reach and spread of such news. This is especially because interest in a particular topic might be lost beyond a certain amount of time, after which individuals may accept their last-known information as fact due to a disinterest in following up on a topic after it has lost relevance. As the mere repetition of sensationalised and/or inaccurate information will be able to negatively impact the public's perception of an issue, quickly issuing corrections will dampen the effects of both sensationalism and illusory truth.

Because hostile information campaigns often disseminate their narratives via social media platforms, these platforms should be involved as part of the solution. In addition to issuing official corrections, government agencies could collaborate with these platforms to curb the reach of fake news. For example, cues and evidence (e.g., warning labels indicating the source of the news) could be provided that would allow users to identify false content and verify the truth of claims (Ang & Chen, 2021; Nassetta & Gross, 2020). The implementation of FICA, in seeking to obtain the cooperation of online platforms to investigate and counter hostile information campaigns from hostile agents, will hopefully be helpful in curbing hostile information campaigns. If successful, these will reduce the effects of sensationalism and illusory truth, and reduce the chances that confirmation and belief biases will contributing to the buildup of false narratives.

3. Cultivate Trust in Legitimate News Sources

In an environment where fake news can be opportunistically used by hostile actors to undermine social stability, trust should be cultivated in legitimate news sources so that citizens know where to turn for truthful information. Singapore's mainstream news media are currently seen as credible by the population (Tandoc Jr, 2021), and should strive to maintain their reputation as trusted news sources. Additionally, as government agencies will have to disseminate information and debunk disinformation, they too should seek to maintain their credibility by being quick, clear and transparent in their communications with the public. This is especially because the integrity of government agencies is a frequent target of online falsehoods (Cheong et al., 2020). Local independent fact-checking initiatives like Black Dot Research and Verifact can also serve as alternative channels of news verification (Black Dot Research, n.d.; *VERIFACT SG*, n.d.).

4. Increase the Media Literacy Skills of the Population

Lastly, while it is crucial for government agencies, social media companies, and fact-checking organisations to do their part in ameliorating the effects of sensational and/or inaccurate news, the pre-emptive step of improving the media literacy skills of the population might also be useful in reducing the damage that can be caused by disinformation campaigns. Educating students on media literacy skills has been observed to help them better detect propaganda and disinformation (IREX, n.d.), which will increase a population's resilience against hostile information campaigns.

Finland, which is often a target of Russia-linked disinformation campaigns (Rosendahl & Forsell, 2016), demonstrates the effectiveness of this strategy. Media literacy classes have been incorporated into the school curriculum since 2014. Among other things, children are taught to evaluate informational sources, conduct fact-checking, and examine the ease with which statistics and images can be manipulated (Barber, 2021). These efforts seem to have paid off as Finland has been relatively successful at fending off foreign interference narratives (Lessenski, 2018).

An educational initiative, "Sure Anot" was also started in Singapore. It aimed to equip Singaporeans between the ages of 50 to 64 with simple fact-checking skills as this demographic was found to be most likely to receive and share false information (Lee, 2020). On the whole, older adults who underwent this program showed increased awareness of the methods to fight fake news, and expressed greater confidence and intention to tackle the spread of fake news via communication applications (Lim et al., 2020).

Clearly, susceptibility to hostile information campaigns will be reduced if individuals are able to recognise the signs indicating the veracity of information, learn to conduct their own basic fact-checking, and understand the importance of not spreading dubious news arising from questionable sources. These will reduce the impact of sensationalism, particularly on social media platforms and other unmoderated groups which are facilitative of the formation of echo chambers.

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- Crime, Investigation and Forensic Psychology (CIFP)
- Operations and Leadership Psychology (OLP)
- Extremism and Terrorism Psychology (ETP)
- Resilience and Safety Psychology (RSP)

With time, HTBSC seeks to be a nexus connecting HT departments, academia and international experts, to offer a dynamic fusion of ideas and practical solutions for HT officers striving to make Singapore a secure home.

The **Centre for Advanced Psychological Sciences** (CAPS) is part of the Office of Chief Psychologist. It was set up in April 2021 to build deep psychological research in MHA, to achieve the following:

- Deep level research
- Cross-cutting research
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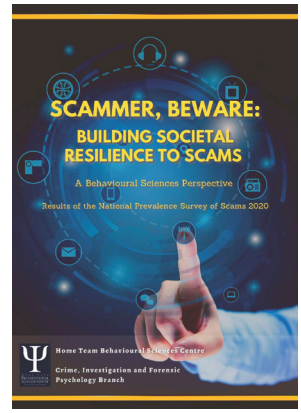
Home Team Behavioural Sciences Centre, 2021, 68 pages



Scams continue to be a concern in 2021. These scam operations are organised such that they target human vulnerabilities and apply social influence techniques to prey on individuals. With the rising trend of scams and financial losses in Singapore, coupled with an increase in the complexity of scam perpetration and the uncertainty experienced during the current global pandemic, there is a growing interest and importance for us to enhance our methods in scam prevention and intervention. Being the first of a series on scam prevalence and target profiles, this e-book aims to describe the findings from the National Prevalence Survey of Scams (NPSS) 2020 to vividly illustrate the scam situation in Singapore, and to highlight the scam prevention and public education measures that Singapore has implemented in the fight against scams.

Whistine Chai, Siti Mariam and Vivian Seah are with the Home Team Behavioural Sciences Centre.

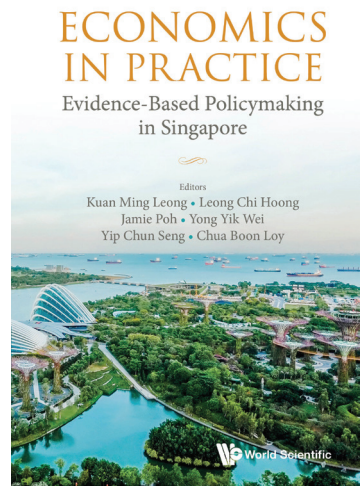
The e-book can be downloaded at:

https://go.gov.sg/scamsebook

BOOK CHAPTERS

The Economics of Sanction Regimes and Criminal Decision-Making (Chapter 11)

By Chia Yee Fei



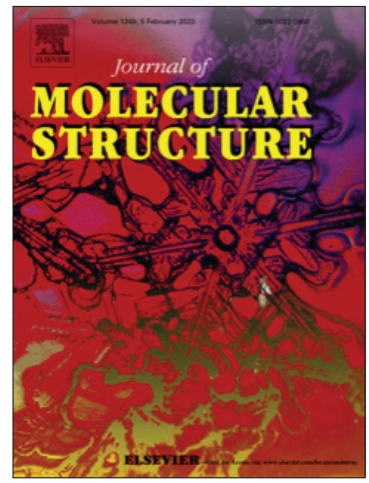
In *Economics in Practice: Evidence-Based Policymaking in Singapore*
Edited by Kuan Ming Leong, Leong Chi Hoong, Jamie Poh, Yong Yik Wei, Yip Chun Seng, Chua Boon Loy
World Scientific, December 2021

The chapter reviews various economic models of crime, as well as empirical studies arising from these models, with a focus on the deterrent effect of sanction regimes on criminal decision-making. She then examines recent studies on the deterrent effect of Singapore's sanction regime and finds evidence that tough laws on drug trafficking have helped to curtail the behaviour of drug traffickers in Singapore.

Chia Yee Fei is with the Ministry of Home Affairs.

DFT/TDDFT Investigation on Donor-Acceptor Triazole-based Copolymers for Organic Photovoltaics

By Sultana Bedoura, Hong-Wei Xi, Ho Wee Goh & Kok Hwa Lim



In Journal of Molecular Structure, Volume 1248
Elsevier/ ScienceDirect.com, 15 January 2022

Using density functional theory (DFT) method, the writers studied several triazole-based donor-acceptor (DA) p-conjugated molecules and evaluated their lowest unoccupied molecular orbital (LUMO) energies. The results show that bithiophene-substituted triazole-based acceptors with short and non-bulky substituents tend to be co-planar and hence exhibit stronger conjugation and electron delocalisation, thereby leading to lower orbital energies of LUMO. Introduction of heteroatom such as S and Se within the chemical structure of triazole-based acceptor also significantly reduces the bandgap by lowering the LUMO energies. Among the donor fragments studied, a dithieno[3,2-b:2¢,3¢-d]phosphole donor fragment (Y4) led to donor-acceptor (DA) pairs with comparatively lower highest occupied molecular orbitals (HOMO, (-5.01 to -4.69 eV) along with higher VOC (>1.29 eV) without much compromise in its bandgap energy. This makes such DA-based polymers promising for bulk heterojunction solar cell applications. TD-DFT calculations were further used to simulate the absorption spectra of the DA monomers and showed that most pairs gave meaningful absorption from 400 to 1100 nm. More interestingly, the addition of long aromatic substituents in the acceptor fragment tends to give broader absorption spectra. Further studies on trimers with DDA repeating unit revealed that copolymers bearing Y4 and a benzo[1,2-d;4,5-d']bitriazole X1 (or X6) exhibits close to ideal band gap of 1.37 eV (1.36 eV) with favorable open circuit voltage 1.23 eV, though absorption by Y4-Y4-X1takes place in Infrared scope with higher oscillator strength. All in all, the writers identified a polymer comprising Y4 donor and X1 acceptor fragment to be a promising material for heterojunction organic solar cell application.

Goh Ho Wee is with the Home Team Science and Technology Agency.

The Reintegration Officers' Perspectives on Offenders to be Discharged from Community Supervision in Singapore

By Joyce Chan

In *Safer Communities*, Vol. 20 No. 2
Emerald Publishing Limited, August 2021

This paper aims to focus on the perspectives of correctional officers supervising young offenders on community supervision in Singapore. The study adopted a qualitative research framework, where attention was devoted to understanding the perspectives of eight reintegration officers, and what they perceived to have helped young offenders successfully discharged from community supervision. The five essential factors that emerged are compliance to supervision conditions, education and/or employment, ability to cope and efforts to change, support and environment. Each factor is defensible and had been substantiated by past research that incorporates evidence-based practice in correctional rehabilitation for offenders.

Joyce Chan is with the Singapore Prison Service.

Identifying the Public's Psychological Concerns in Response to COVID-19 Risk Messages in Singapore

By Xingyu Ken Chen, Anais Ang, Jing Yi Lee, Jason Wong, Loo Seng Neo, Gabriel Ong & Majeed Khader

In *Journal of International Crisis and Risk Communication Research*, 4(2), July 2021

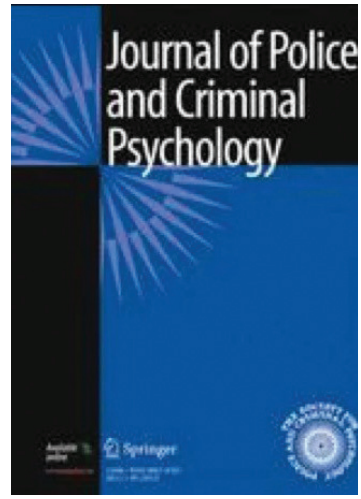
Understanding the social-psychological processes that characterise communities' reactions to a pandemic is the first step toward formulating risk communications that can lead to better health outcomes. This study examines comments on Facebook pages of five Singapore media outlets to understand what topics are being discussed by the public in reaction to the implemented precautionary measures in Singapore so as to infer their psychological concerns. Using Anchored Correlation Explanation as a topic modelling technique, this study examines around 10,000 comments and identifies 21 topics that are discussed. The 21 topics were categorised and organised into seven broad themes of psychological concerns. Implications for theory and practice are then discussed.

Xingyu Ken Chen, Gabriel Ong and Majeed Khader are currently with the Home Team Behavioural Sciences Centre (HTBSC). Anais Ang, Jing Yi Lee, Jason Wong and Loo Seng Neo were formerly with HTBSC.

Surviving Work from Home: Observations from Singapore

By Tiffany Nicole Danker, Hui Lin Yap, Alyah Dinah Zalzuli, Hui Fen Ho & Jansen Ang

In *Journal of Police and Criminal Psychology*
Springer, July 2021



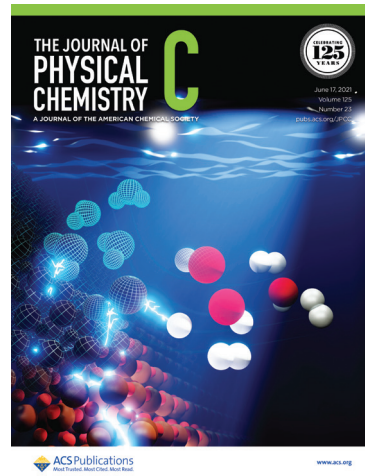
Circuit Breaker measures were implemented in Singapore on 7 April 2020, and work from home arrangements were officially made compulsory for most due to COVID-19. This study assessed the effects of prolonged telecommuting within the Singapore Police. Items on productivity, satisfaction with telecommuting, work-life effectiveness, feelings of safety, stress levels, connectedness to and support by colleagues, and supervisors were included. The study found that while prolonged telecommuting did not have any impact on levels of satisfaction with telecommuting, individuals with caregiving duties were significantly less satisfied with telecommuting than non-caregivers. Implications of the findings were discussed with respect to the necessary support required by officers while telecommuting. Recommendations on how individuals can practice selfcare while telecommuting for prolonged periods were also proposed.

Tiffany Nicole Danker, Hui Lin Yap, Alyah Dinah Zalzuli, Hui Fen Ho and Jansen Ang are with the Singapore Police Force.

Isoemissive Photoluminescence from a Quaternary System of Valley-Polarised, Defect-Bound, Excitons and Trions in Two-Dimensional Transition Metal Dichalcogenides

By Swee Liang Wong, Zi En Ooi, Jing Yee Chee, Chit Siong Lau & Kuan Eng Johnson Goh

In *The Journal of Physical Chemistry,* Issue: 125
American Chemical Society, June 2021



Interest in the use of local band extrema, known as valleys, as a possible information carrier has in recent years been advanced by the isolation of 2D transition metal dichalcogenides (TMDCs). In some monolayer TMDCs, the structural inversion asymmetry leads to spin-valley locked states that present potential advantages for information storage and manipulation beyond existing charge- and spin-based semiconductor technologies. However, understanding of the role of defects on exciton recombination and valley scattering remains lacking and limits progress toward applications. Here, we report gate voltage dependent polarised photoluminescence measurements on CVD grown monolayer WS2 and MoS2 field-effect transistors and observe a quaternary system of valley polarised excitons and trions. Intriguingly, we find the spectra to exhibit isoemissive points, which were previously seen only as evidence of a binary system. We propose a rate model to explain the existence of isoemission in a quaternary system and find that the presence of isoemissive points imply a kinetic relationship between recombination and valley scattering. This relationship sheds light on the inverse relation seen between the polarisation degree and photoluminescence intensity. Further consideration of the phenomenon also led to the identification of a possible new mechanism for charge carrier detrapping using the energy released from trion recombination.

Swee Liang Wong is with the Home Team Science and Technology Agency.

Transformational Environment in the Singapore Prison Service

By Alicia J. H. Tan & Shana S. Sim

In *Advancing Corrections Journal*, Edition 11-2021
International Corrections and Prisons Association, June 2021

The Singapore Prison Service (SPS) has re-designed its prison environment in a bid to support rehabilitation, reintegration, and long-term desistance. Guided by best practices in the correctional literature, SPS developed what we refer to as the Transformational Environment (TE). The introduction of the TE signals a move beyond focusing on rehabilitation programs, to creating a holistic rehabilitative correctional environment. This paper seeks to illustrate the design and implementation of the TE in SPS, which is grounded in the five Ps – Purpose, People, Processes, Programmes, and Place. With these five Ps, this paper provides practitioners with some practical ideas on creating a rehabilitative environment, both in custody and in the community.

Alicia Tan and Shana Sim are with the Singapore Prison Service.

Roles of Effort and Reward in Well-Being for Police Officers in Singapore: The Effort-Reward Imbalance Model

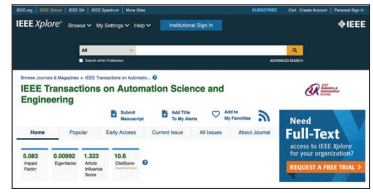
By Eunae Cho, Miaohua Chen, Shi Min Toh & Jansen Ang

Social Science & Medicine, 277 (2021)
Elsevier Ltd, March 2021

Despite the growing body of research on the effort-reward imbalance (ERI) model, evidence is scarce for the generalisability of the model across various national and occupational contexts. Also, studies that examine a wider variety of health and well-being outcomes of ERI are warranted, especially in vocations in which effort and stress is known to be high and reward is usually limited – such as policing. The current study examined the relationship between the ERI perception and four employee well-being outcomes (self-reported physical health, sickness absence, job satisfaction, and work-life effectiveness) among a sample of police officers in Singapore. Cross-sectional survey data collected from a large representative sample of uniformed police officers from Singapore were used (N = 8729), and logistic regression analyses were used to test hypotheses. In line with the theory, employees characterised by high intrinsic effort and low reward (ERI > 1) reported significantly elevated odds ratios of poor physical health (OR = 1.25), job dissatisfaction (OR = 1.53), and work-life ineffectiveness (OR = 1.31). Contrary to expectations, an unusual relationship was observed such that police officers who were overcommitted exhibited lower odds ratios of the suboptimal outcomes. Interestingly, police officers in the low effort–low reward condition exhibited the worst outcomes, whereas officers in the high effort–high reward condition reported optimal outcomes. Findings were generally consistent across genders and age groups. This research bolsters the core proposition of the ERI model and emphasises the importance of social and occupational contexts in the study of ERI.

Miaohua Chen is with the Republic Polytechnic and was previously with the Singapore Police Force. Shi Min Toh and Jansen Ang are with the Singapore Civil Defence Force and Singapore Police Force respectively.

Weight Imprinting Classification Based Force Grasping with a Variable-Stiffness Robotic Gripper



By Haiyue Zhu, Xiong Li, Wenjie Chen, Xiaocong Li, Jun Ma, Chek Sing Teo, Tat Joo Teo & Wei Lin

In *IEEE Transaction on Automation Science and Engineering*
IEEE, February 2021

Universal grasping for a diverse range of objects is a challenging problem in robotics, especially in the presence of mixed properties such as fragile/rigid, heavy/light, etc. Towards the universal grasping, this paper presents a practical and systematic grasping control framework that enables a variable stiffness gripper to handle the objects with diverse properties using a category-aware force regulation approach, termed as classification-based force grasping. Under this framework, Convolutional Neural Network (CNN) is employed to classify the category of the grasping object, and a grasping force is determined based on the classified category through a database that records a predefined force magnitude per category. Sequentially, the gripper can be adjusted to a force-optimised stiffness, which facilitates the achievement of an accurate grasping force regulation in a large range. Technically, two novel enabling modules are developed for grasping classification and execution, respectively. First, a novel weight imprinting technique based on centre-guided feature embedding is proposed for object classification. It enables the CNN to efficiently handle novel object categories using only a few samples even without retraining/fine-tuning. Secondly, a vision-based grasping force sensing module is developed, which is based on the specifically-designed variable-stiffness gripper. Its grasping force can be estimated from the deflection angle of finger flexure by the vision, so that the contact force can be sensed and regulated. Remarkably, only single-source vision information is needed for both of the above modules without any additional force sensor. Experiments are conducted to evaluate the performance of the proposed classification-based force grasping approach.

Tat Joo Teo is with the Home Team Science and Technology Agency.

A Decoupled 6-DOF Compliant Parallel Mechanism with Optimised Dynamic Characteristics Using Cellular Structure

By Minh Tuan Pham, Song Huat Yeo, Tat Joo Teo, Pan Wang & Mui Ling Sharon Nai

In *Machines,* Volume 9, issue 1
MDPI, January 2021

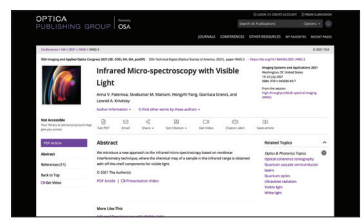
This paper presents a novel six degrees-of-freedom (DOF) compliant parallel mechanism (CPM) with decoupled output motions, large workspace of 6 mm for translations and >12deg for rotations, optimised stiffness, and dynamic properties. The working range and the motion decoupling capability of the six-DOF CPM are experimentally verified, and the mechanical properties are shown to be predictable. The proposed CPM is synthesised by applying the beam-based structural optimisation method together with the criteria for achieving motion decoupling capability. In order to improve the dynamic behaviours for the CPM, cellular structure is used to design its end effector. The obtained results show that the dynamic performance of the CPM with cellular end effector is significantly enhanced with the increase of 33% of the first resonance frequency as compared to the initial design. Performances of the three-dimensional (3D)-printed prototype are experimentally evaluated in terms of mechanical characteristics and decoupled motions. The obtained results show that the actual stiffness and dynamic properties agree with the predictions with the highest deviation of ~10.5%. The motion decoupling capability of the CPM is also demonstrated since almost input energy (>99.5%) generates the desired output motions while the energy causes parasitic motions is only minor (<0.5%).

Tat Joo Teo is with the Home Team Science and Technology Agency.

CONFERENCE PAPERS

Infrared Micro-spectroscopy with Visible Light

By Anna Paterova, Sivakumar Maniam, Hongzhi Yang, Gianluca Grenci & Leonid Krivitsky



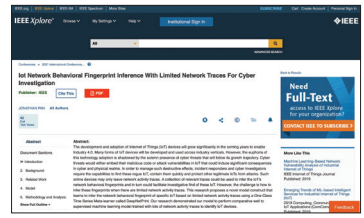
At the 2021 OSA Imaging and Applied Optics Congress, July 2021
Published by Optica Publishing Group (formerly OSA)

The writers introduce a new approach to the infrared micro-spectroscopy based on nonlinear interferometry technique, where the chemical map of a sample in the infrared range is obtained with off-the-shelf components for visible light.

Sivakumar M. Maniam is with the Home Team Science and Technology Agency and the National Institute of Education, Singapore.

IoT Network Behavioral Fingerprint Inference with Limited Network Traces for Cyber Investigation

By Jonathan Pan



At the 2021 International Conference on Artificial Intelligence in Information and Communication, April 2021
Published by IEEE

The development and adoption of Internet of Things (IoT) devices will grow significantly in the coming years to enable Industry 4.0. Many forms of IoT devices will be developed and used across industry verticals. However, the euphoria of this technology adoption is shadowed by the solemn presence of cyber threats that will follow its growth trajectory. Cyber threats would either embed their malicious code or attack vulnerabilities in IoT that could induce significant consequences in cyber and physical realms. In order to manage such destructive effects, incident responders and cyber investigators require the capabilities to find these rogue IoT, contain them quickly and protect other legitimate IoTs from attacks. Such online devices may only leave network activity traces. A collection of relevant traces could be used to infer the IoT's network behavioral fingerprints and in turn could facilitate investigative find of these IoT. However, the challenge is how to infer these fingerprints when there are limited network activity traces. This research proposes a novel model construct that learns to infer the network behavioral fingerprint of specific IoT based on limited network activity traces using a One-Class Time Series Meta-learner called DeepNetPrint. Our research demonstrated our model to perform comparative well to supervised machine learning model trained with lots of network activity traces to identify IoT devices.

Jonathan Pan is with the Home Team Science and Technology Agency.

THE HOME TEAM COMPRISES 11 AGENCIES:

Ministry of Home Affairs Headquarters • Singapore Police Force • Internal Security Department • Singapore Civil Defence Force • Immigration & Checkpoints Authority • Singapore Prison Service • Central Narcotics Bureau • Home Team Academy • Home Team Science and Technology Agency • Casino Regulatory Authority • Yellow Ribbon Singapore

All Home Team departments and agencies work together as one, in close partnership with the community, to keep Singapore safe and secure.

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