

Why Serious Games?

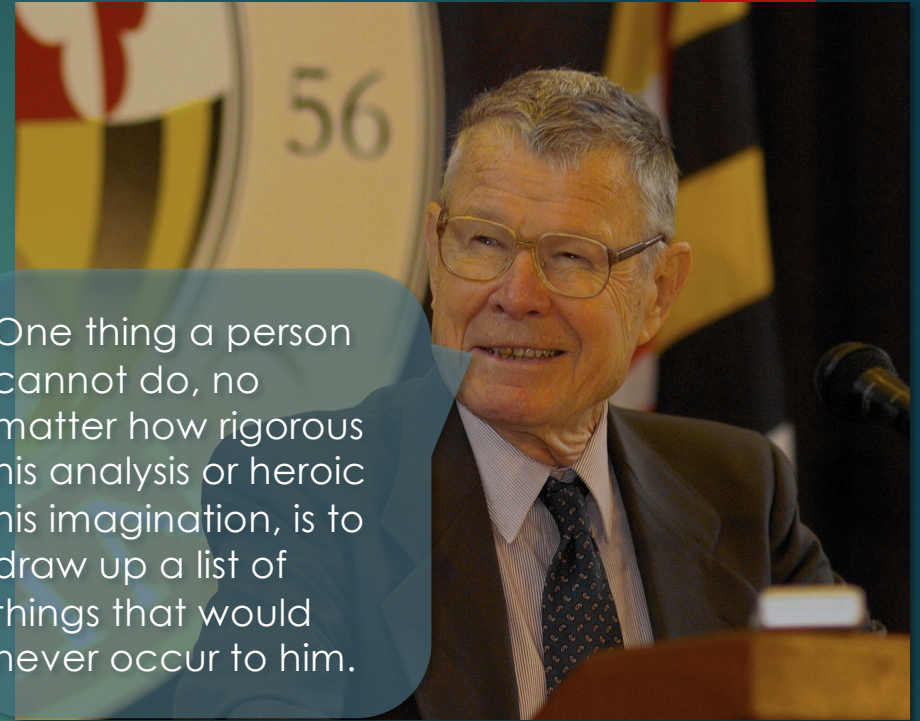
...in the whole range of human activities, war most closely resembles a game of cards.



Carl von Clausewitz

- Prussian military theorist.
- Author of *On War*.

with Marie Sophie
Gräfin von Brühl



One thing a person cannot do, no matter how rigorous his analysis or heroic his imagination, is to draw up a list of things that would never occur to him.

Thomas Schelling

- Nobel Prize (Economics) for work on game theory.
- Pioneer of POL-MIL gaming at RAND.

What are serious games?

Structured form of play.
Adversarial or competitive interaction.

- ▶ **Serious games** are those that have as their primary purpose a serious objective other than entertainment.
 - ▶ education and capacity-building
 - ▶ analysis
 - ▶ information, influence and advocacy

Serious games can also be engaging and even “enjoyable”.

What is gamification?

- ▶ **Gamification** is the application of typical elements of game playing to other areas of activity.
 - ▶ tasks
 - ▶ points scoring
 - ▶ competition
 - ▶ badges



100 points

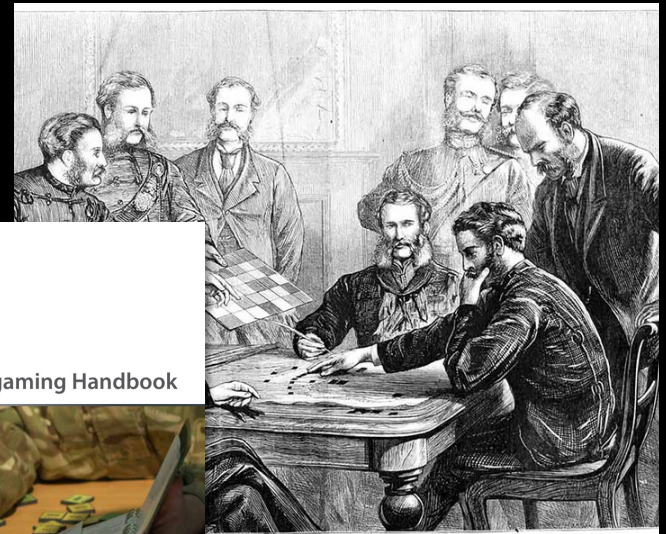
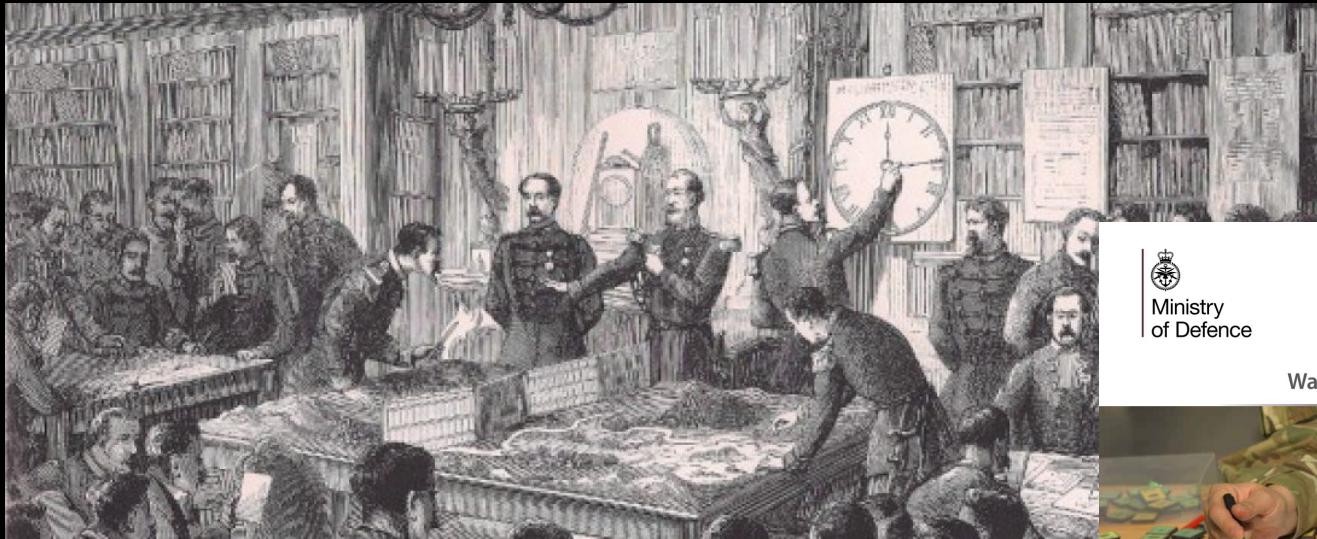



What is wargaming?

Wargaming was perhaps the first form of professional "serious gaming."

- ▶ **Wargaming** is the application of **serious games** to issues of **armed conflict**.

In critical security and strategic studies, this might be expanded beyond military security and armed conflict to many other forms of (human) security and (political, social, economic) conflict.

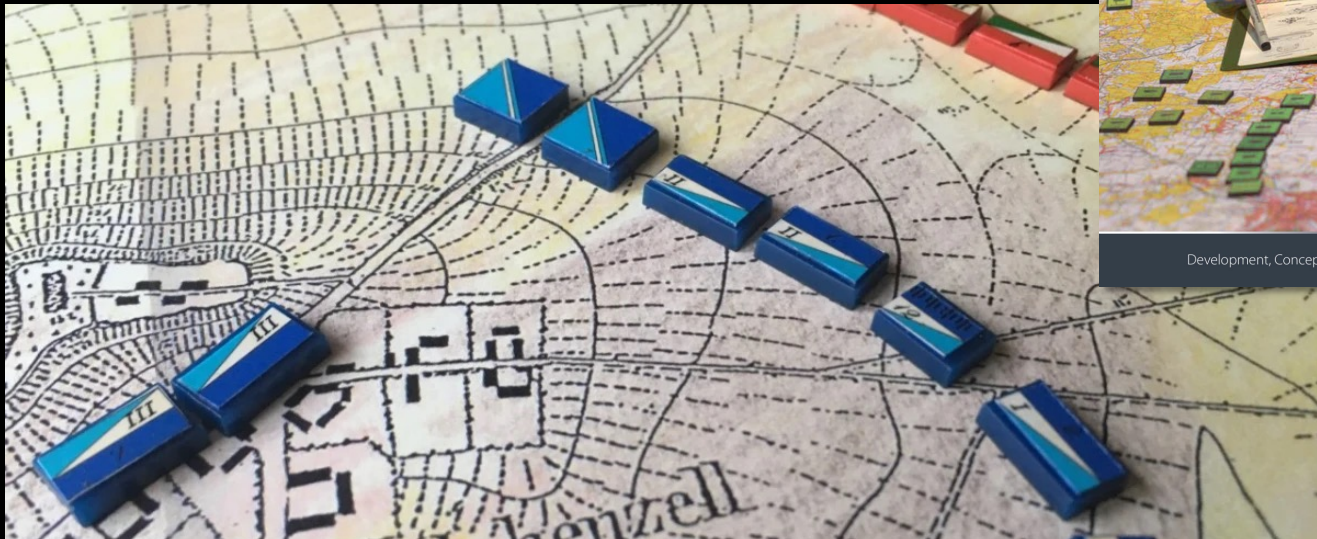



Ministry
of Defence

Wargaming Handbook



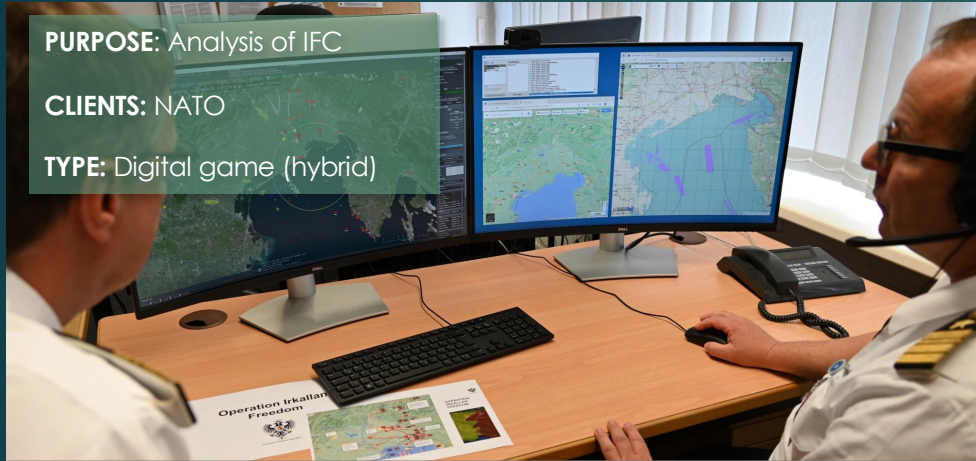
Development, Concepts and Doctrine Centre



PURPOSE: Analysis of IFC

CLIENTS: NATO

TYPE: Digital game (hybrid)



Command: Professional Edition (Matrix Games, 2018)

DRDC, NATO CoE for Operations in Confined and Shallow Waters and SAS 151

PURPOSE: Tactical analysis and training

CLIENT: British Army

TYPE: Board game



STRIKE! (Dstl, 2018)

PURPOSE: Familiarization, experiment

CLIENT: Connections UK

TYPE: Megagame



Dire Straits (Rock Paper Scissors/PAXsims, 2017)

PURPOSE: Strategic reflection

CLIENT: US national security community, PME students

TYPE: Board game



Hedgemony (RAND, 2017)

PURPOSE: Matrix game familiarization

CLIENTS: serious gamers

TYPE: Matrix game

ISIS Crisis and Reckoning of Vultures (PAXsims, 2014-17)

PURPOSE: Hobby, experimentation

CLIENTS: hobbyists

TYPE: Miniatures game

Estonia (PAXsims, 2020)

PURPOSE: Analysis of IFC information warfare

CLIENTS: NATO SAS 151

TYPE: Social media game (hybrid)

New report: Military violated rules by collecting information on Hypatian-Canadians, conducting OCS propaganda

Investigations into the activities have concluded not only were rules not followed, but senior leaders also had no authority to conduct such initiatives.

David Pugliese - Ottawa Citizen
20/12/2021 - 10:06 AM (GMT-5) - 3 minutes read

Not all media outlets are independent of government influence

Democracy Today has reported that the Hypatian Minister of Defence, all Ikkalian officials who participated in the recent autonomy referendum are to be arrested. This represents almost all elected officials in the region. Ikkalian Members of Parliament have fled the Hypatian capital because they believe they will be arrested. Two are reported to already be in police custody. The effect of martial law, therefore, may be to entirely disenfranchise the Ikkalian minority.

Courtesy of the Best Disinformation Network

Civilian ship with medical personnel, marked as such, offers to evacuate OCS survivors.

Amphibious landing by 1st B7N, Naval Infantry REGT.

NATO SAS 151 (2021/22)

PURPOSE: PME, hobby

CLIENTS: PME, students, hobby

TYPE: Board game

IMPROVED EXPLOSIVE DEVICE

IEDs may be placed in non-ISF areas. The IED may not be moved once placed.

Roll immediately upon ISF unit entering area:

- 1-3 No effect
- 4 Inflict 1 disruption
- 5-6 Inflict 1 step loss

POOR COORDINATION HAMPERS OPERATIONS

Place a disrupted marker on a unit in an area that contains ISF units reporting to different headquarters (ISF player's choice). If there is no such area or the ISF player has Improved Coordination, ignore this effect.

We Are Coming, Nineveh! (Nuts! Publishing, 2023)

The Krulak Center @TheKrulakCenter · Follow


Day 5 of Intro to #wargaming at @FortLeavenworth — "Aftershock" by @RexBrynen. Pretty simple game mechanics but the decisions were HARD, often brutal in determining priorities for disaster relief:



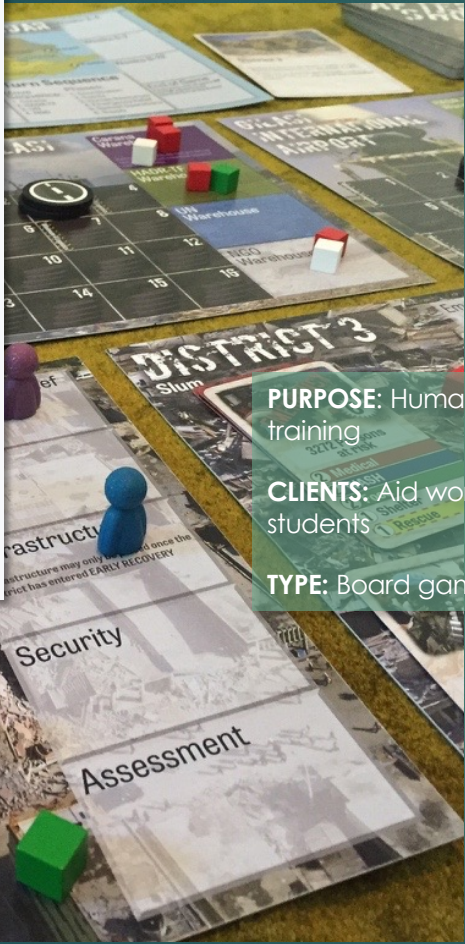
12:33 PM · Nov 4, 2022

40 Commando Royal Marines @40commando

A thought provoking and challenging humanitarian desktop exercise hosted by @SSI_Exeter. Allocating scarce resources (water, medical, shelter, etc.) after a disaster while reacting to unforeseen incidents. An added complexity was justifying our actions in mock press conferences.



10:57 AM · May 2, 2019



PURPOSE: Humanitarian training
CLIENTS: Aid workers, PME, students
TYPE: Board game



RFA Argus @RFAArgus · Follow

#TuesdayTactics #wargaming


The CSF battlestaff ran through #Aftershock, a Humanitarian Crisis Game where agencies work to tackle chaotic events that follow a natural disaster. A good planning tool, relevant and helpful for our role ready respond to Hurricanes in the #Caribbean.



8:29 AM · Nov 3, 2020

Sabrina E. Medeiros @sabinamed

Jogo de Emergências Complexas, para estudo, no @IDNPORTUGAL . @RexBrynen: it is a fantastic and complete tool to enhance coordination through clusters of collaboration. Congrats! #seriousgames #wargaming @GIRL_Hub is our new developing hub in Lisbon! @ULusofona



AFTERSHOCK: A Humanitarian Crisis Game (PAXsims, 2015)

PURPOSE: Humanitarian training

CLIENTS: Aid workers, students

TYPE: Digital browser game

Chapter 1
Week 1
Time to make a decision

PHC 5
PHC 4
PHC 3
PHC 6
PHC 7
Murelle
District hospital
Simberry Farms

Myro

4

Outbreak-READY! 2 (Ready Initiative, 2023)

PURPOSE: Planning

CLIENTS: PHAC, FAC, federal cabinet

TYPE: Red Team + TTX

Fortin said there have been “tabletop” exercises to plan the distribution over the last weeks, including one on Wednesday that involved more than 150 people from all 13 provinces and territories, and eight federal departments and agencies.

The Canadian Armed Forces received formal orders last week to start planning for the distribution of COVID-19 vaccines, though the military’s top commander says preparations have been under way for longer.

#CBC NEWS

PROTECT YOUR | PROTÉGEZ

COVID 19 TTX (PHAC/CAF, 2020)

PURPOSE: Humanitarian training

CLIENTS: WHO + partners

TYPE: Digital browser game

GOARN
Global Outbreak Alert and Response Network

OUTBREAK RESPONSE

GOARN Outbreak Response (WHO, 2022)

PURPOSE: Planning

CLIENTS: AAFC

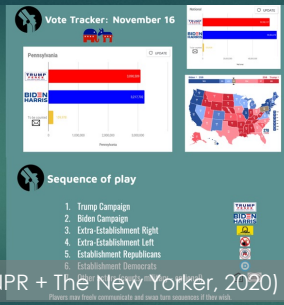
TYPE: Matrix game

African Swine Fever (AAFC, 2020)

PURPOSE: Forecasting

CLIENTS: Journalists

TYPE: Matrix game



PURPOSE: Policy development, negotiations support

CLIENTS: Negotiators, diplomats

TYPE: Various

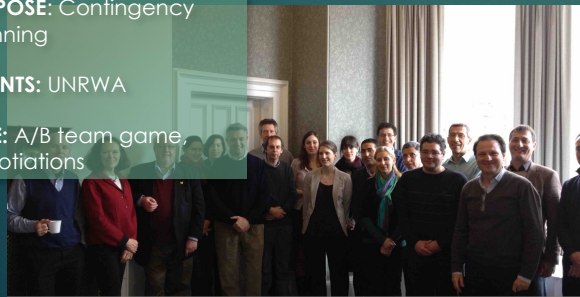


Minster Lovell Process (Chatham House, 2000-11)

PURPOSE: Contingency planning

CLIENTS: UNRWA

TYPE: A/B team game, negotiations



UNRWA funding (University of Exeter, 2013)

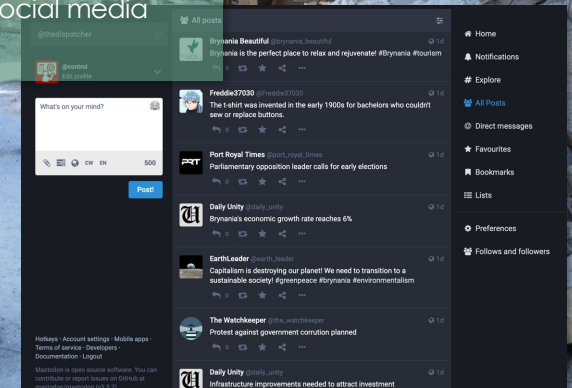
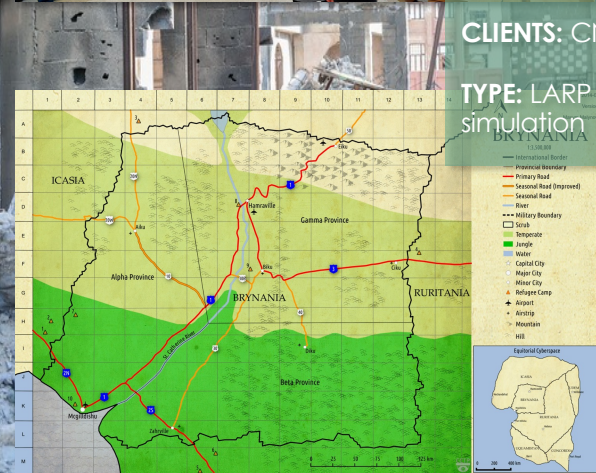


PURPOSE: Journalism training



CLIENTS: CNN

TYPE: LARP + social media simulation



CNN Academy (CNN, 2022)

Serious gaming is not a magic wand

- ▶ The **question** questions
 - ▶ Is gaming the right tool? Are we gaming the right thing?
- ▶ The **modelling** problem
 - ▶ Does our game appropriately and adequately represent what it needs to represent?
- ▶ Challenge of **idiosyncrasy**
 - ▶ How is the value of the game affected by those who play it?
- ▶ The **curse of a small-n**.
 - ▶ Few iterations make it hard to generalize.

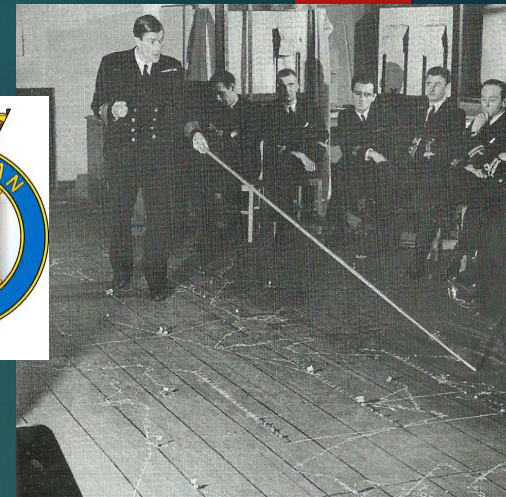


Serious gaming IS a useful tool in the analytic toolbox

- ▶ Serious gaming offers a (possibly) **unique perspective** on how capability, context, and human decision-making interact.
- ▶ Serious gaming (might) **generate new insights** into old problems.
- ▶ Serious gaming (done well) **crowdsources ideas** from diverse participants.
- ▶ Serious games can be part of an experimental methodology.
- ▶ Serious games complement other analytical methodologies.



Western Approaches Tactical Unit (RN)



Halifax Tactical Table (RCN)

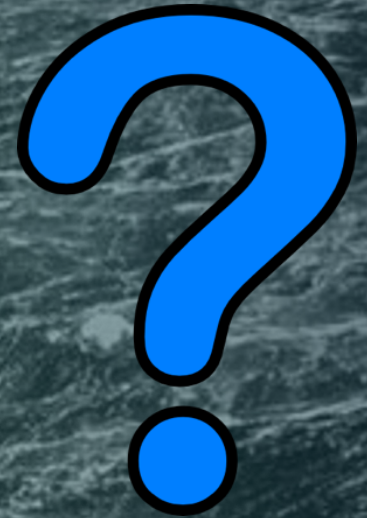


HMS Orchis picks up survivors and reports that attacking U-boats are slow to dive when spotted.



HMCS St. Croix detects a U-boat, and moves to attack..

Suddenly, St. Croix is hit astern by a torpedo.



1943. Convoy ONS 18/ONS 202 is bound for Halifax.



Intelligence on G7es
(T5) Zaunkönig
(Wren/GNAT)
acoustic torpedo.

Reports from escort
commanders.

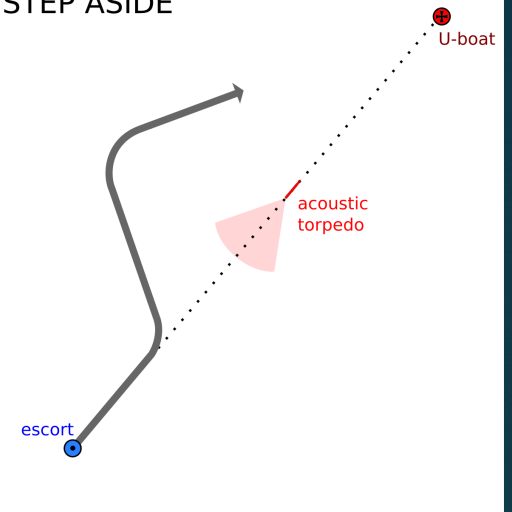
Working
assumptions.

Wargame possible
solutions.

Development of
tactical techniques
for countering
acoustic
torpedoes.

Advise convoy
escorts.

STEP ASIDE



Inform future
development of
technical
countermeasures.

Policy analysis and planning

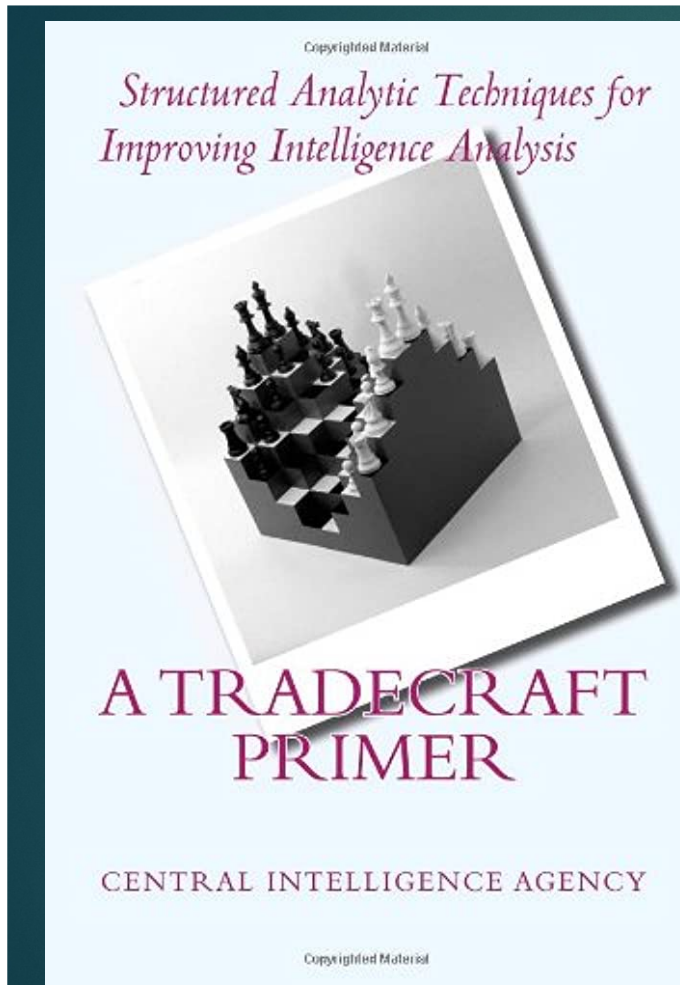
- ▶ considering responses
 - ▶ adversaries
 - ▶ allies, partners, other stakeholders
- ▶ contingency planning
 - ▶ identifying and exploring “what-ifs?”
 - ▶ thinking about second and third-order effects
 - ▶ immunization against risks
- ▶ fostering innovation
- ▶ cheaper than policy or planning mistakes (and no one gets hurt)



Stimulating foresight

- ▶ Research suggests that “gaming” a situation produces a superior forecast compared to simply “thinking about it.”
 - ▶ This is not to say that a single game reveals the future—it remains a highly imperfect technique of prediction (and prediction is hard in any case).
 - ▶ However, a (well-designed and well-facilitated) game aids in understanding stakeholder perspectives and anticipating responses.
 - ▶ Gaming encourages players to “show their work” when thinking about future trends
- ▶ It thus explores a *possible* future, while **stimulating a much broader discussion of how a future might come to be.**





Most of these require less time/resources to organize than a substantial or complex game.

- ▶ **Alternative analysis** comprises a range of structured analytical techniques, many of which are “game adjacent”
 - ▶ brainstorming
 - ▶ Team A / Team B
 - ▶ red teaming
 - ▶ scenario discussions
 - ▶ alternative futures analysis

Most of these do not incorporate iterative adversarial adaptation (a dynamic, thinking, adapting foe or other stakeholders).

Available at
www.cia.gov

Gaming the Vaccine

Architecture

Week 1

23-26 November 2020



Independent
Red Team

Week 2

2 December 2020



Tabletop
Exercise

Week 3

11 December 2020



Independent
Red Team

Distribution
Plan



Contingencies



Mitigating
Courses of
Action



Residual
Risks

Gaming the Vaccine

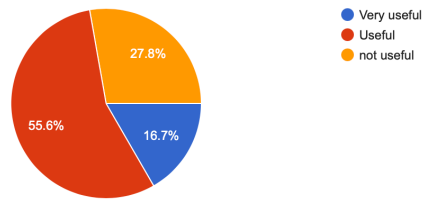
The image displays a grid of 12 news thumbnails, each with a 'LIVE' indicator and a 'BREAKING NEWS' banner. The thumbnails cover various aspects of the vaccine rollout, including safety concerns, distribution challenges, and public reactions.

- Thumbnail 1:** FIRE AT MADRID VACCINE FACILITY (17:00) - FIREFIGHTERS EXTINGUISH BLAZE AT LABORATORIOS FARMACÉUTICOS KOV
- Thumbnail 2:** NOT COLD ENOUGH? (20:48) - DISTRIBUTION OF PFIZER VACCINE HAMPERS BY COLD STORAGE PROBLEMS
- Thumbnail 3:** HACKERS TARGET HEALTHCARE (14:07) - PROVINCIAL GOVERNMENT DETECTS "UNAUTHORIZED ACCESS ATTEMPTS"
- Thumbnail 4:** MAKING US SICK? (16:41) - QUESTIONS RAISED ABOUT VACCINE EFFECTS
- Thumbnail 5:** WHO WANTS A JOB? (18:02) - POLL SHOWS MANY CANADIANS STILL HAVE CONCERNS ABOUT NEW VACCINES
- Thumbnail 6:** BELGIUM PROBES VACCINE DEATH (21:09) - OFFICIALS SAY "NO EVIDENCE YET THAT THE VACCINE IS RESPONSIBLE"
- Thumbnail 7:** FAIR SHARE? (21:50) - SOME PROVINCES MAY WANT MORE, POINTING TO BACKLOGS AND INFECTION RATES
- Thumbnail 8:** MORE VACCINES FOR AMERICA (13:55) - BIDEN ADMINISTRATION INVOKES DEFENSE PRODUCTION ACT
- Thumbnail 9:** ANTI-VACCINE PROTEST CAMP (14:07) - "WHY IS THE GOVERNMENT EXPERIMENTING ON US?" ASK PROTESTERS
- Thumbnail 10:** SHOULD FEDS STEP IN? (22:03) - GROWING NUMBER OF GROUPS DEMAND NATIONAL STANDARD

Gaming the Vaccine

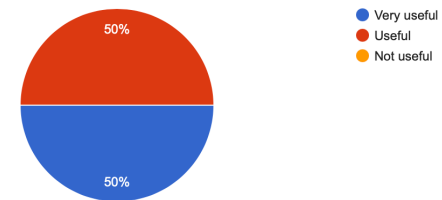
Was the TTX a useful way of building or expanding networks?

18 responses



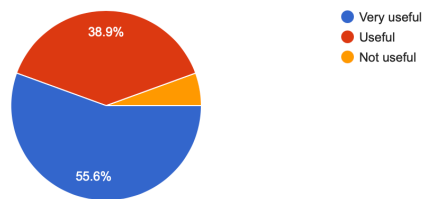
Was the TTX a useful way of exploring possible contingencies?

18 responses



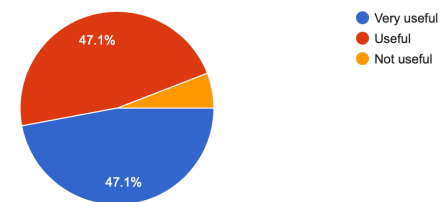
Was the TTX useful for gaining new information?

18 responses



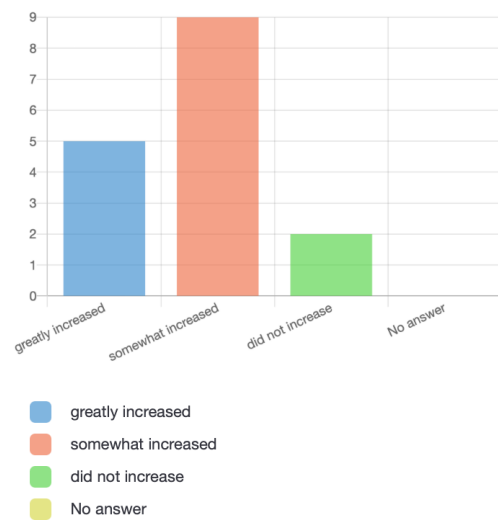
Was the TTX a useful way of sharing perspectives with other organizations ?

17 responses

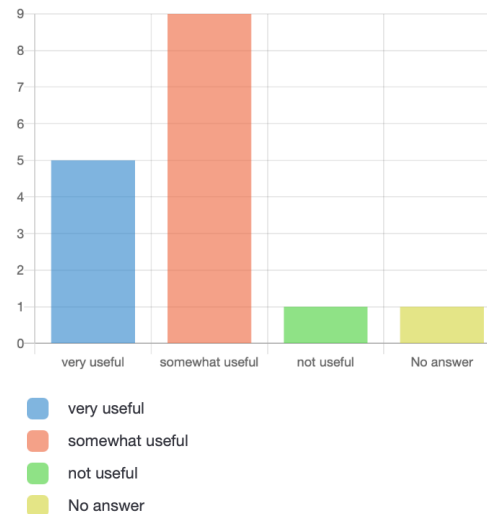


Gaming the Vaccine

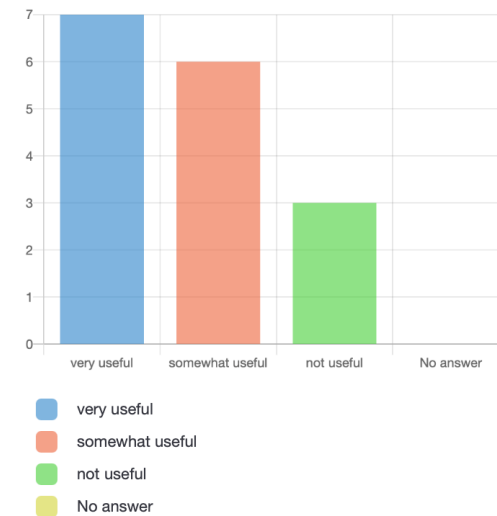
To what extent did the December 2020 tabletop exercise increase your knowledge of the vaccine rollout?



How useful was the tabletop exercise in allowing you to share insights and perspectives with other officials (in different jurisdictions or with different areas of responsibility or expertise)?

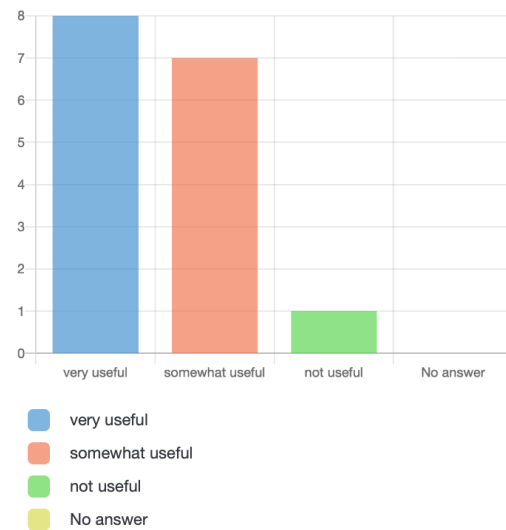


How useful was the TTX in helping to anticipate major challenges in Canada's vaccine rollout?

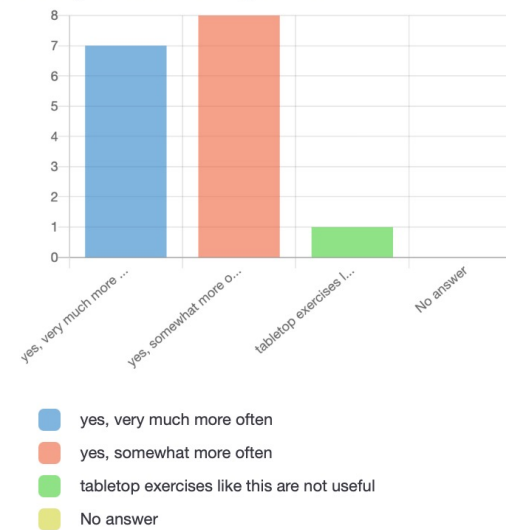


Gaming the Vaccine

Was the December 2020 tabletop exercise a useful expenditure of your time?



Should similar exercises be used more often in preparing for, or responding to, major public health challenges or other emergencies?



Gaming the Vaccine

So, when people were saying "OK but what is this risk analysis based on?" I said, "Here, in the wargame." When people anchored that to the wargame they said "OK, that's good, that means this has been discussed, there's been a lot of eyes on this."

Everyone liked that, not because of any specific revelation... but because it seemed a good vector check by outside agents.... This is a good way to assure we're not falling for some sort of confirmation bias.... That was appreciated by a lot of the seniors.



CAF planner

Had we not done it in a really controlled fashion before the doses hit the ground, when it all got really muddy... I think we would have been in a much more challenging space.



PHAC official

Serious gaming IS ALSO useful tool in the pedagogical toolbox

- ▶ Stimulate engagement and motivation.
- ▶ Provide a “safe to fail” environment.
- ▶ Form of “intellectual cross-training.”
 - ▶ Learning styles?
 - ▶ Provide a break from the monotony of readings and lectures.
- ▶ Offer insight into issues of process, coordination, interaction that lectures and readings often convey poorly.



Education and capacity-building



research on educational games

...suggests moderately positive effects on learning (compared to conventional methods), but considerable variability.



much depends on simulation design and implementation

A poor simulation implemented well may have superior learning outcomes over a good simulation implemented poorly.

Simulations do not teach themselves.

Education and capacity-building

Play

Game **play** generates more effective learning than “role thinking” (Green and Armstrong 2011).

Transform

Games can **transform** classroom dynamics in positive ways: ice-breaking; team-building; motivation.

Design

Game **design** can generate more effective and structured learning than game play (Druckman and Ebner 2007).

Diversity and inclusion in serious games

- ▶ Diversity and inclusion generally enhances the value and outputs of serious gaming
 - ▶ demographic (gender, ethnicity, class, etc.)
 - ▶ professional (expertise, seniority, etc.)
- ▶ Consideration of a broader range of ideas and perspectives
- ▶ Innovation and synergy

The **Derby House Principles** have been adopted by many of the leading professional wargaming organizations, conferences, and think-tanks.



Some caveats

- ▶ Do you really need a game?
- ▶ Serious gaming is part of a “cycle of research” (Perla) or a pedagogical process.
- ▶ Educational games and negative learning.
- ▶ “The three witches of wargaming” (Downes-Martin).
- ▶ Technology and gaming.
- ▶ Don't lose sight of the objective.