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See Appendix S&P – Surveillance & Probing Example
See Appendix SO & IO – Special Operation & Information Operation Example

“In politics and in life, ignorance is not a virtue,’ [President Obama] told the more than 12,000 graduates in New Brunswick, New Jersey. ‘It’s not cool to not know what you’re talking about. That’s not keeping it real or telling it like it is. That’s not challenging political correctness. That’s just not knowing what you’re talking about. And yet we’ve become confused about this.’”

– Rachel Smolkin, USA Today, May 16, 2016 ¹

An Observation: GGDM is non-political or tries, as much as possible, to be about the future and not the politics of the here and now. GGDM is a generativity.

- ✓ “And what I like about this is that [Noam] Chomsky has shown a commitment not to allow the forest to be missed for the trees. ... What is so important about this is that Chomsky distills the importance of not messing around with these sidebar arguments.” – David Pakman, The David Pakman Show, June 24, 2020.²

Quotes are included not for political purposes, but because they add something useful to the conversation. Obama was the President of the United States, regardless of party affiliation and so now is Trump, and is an important historical figure, but anyone could have made the same point and it would still be just as useful but less quotable. Phyllis Schlafly is also quoted in GGDM – and it would be hard to imagine two figures more politically opposite than Obama and Schlafly – but both have been quoted because they have something useful to add to the conversation. Hitler is quoted too, as is Frederick the Great and Robespierre and Spock and G’Kar for the same reasons. The following disclaimer found at the bottom of military-quotes.com/Hitler.htm is the standard in apologetics:

- ✓ “This collection of Hitler quotes was not made to glorify Hitler in any way. But whether we like it or not he was an important part of our history and we must never forget the great atrocities committed by Hitler and Nazi Germany.”

Or just because he’s a bad guy, doesn’t mean he doesn’t have something interesting to say.

- ✓ Unfortunately for the future of humanity, the recruiters of Tomorrowland (2015) recruited Hitler into the future on April 30, 1945 because he was a dreamer who wouldn’t quit, and dreamers must stick together! Right?

“But one of the most important legacies of the Hubble Deep Field was how it changed the culture of astronomy. [Robert Williams, audio interview] ‘Until this time, astronomy had a history of people taking the data and keeping it to themselves until they had fully analyzed it. After all, this was intellectual property.’ Instead of hoarding the discoveries embedded in the dataset, Williams and his team formatted and released it immediately to the wider scientific community. It’s been cited in hundreds of papers. [Robert Williams, audio interview] ‘Nowadays, it is so much more common for people to take interesting observations and make the data available to the public even though they might have a right to keep it for a certain period of time to themselves.’”

– Vox Video Article, “The 1995 Hubble photo that changed astronomy,” Vox YouTube Channel, September 21, 2016 ³

Datastream: The now is here, today, and thus already really in the past like the liquid you sip from a cup, by the time you taste it it is already past. Taste is sensory data, information, input; this is why animals depend so much on smell, if it doesn't smell right, they won't eat it.

Not so humans. By the time we perceive information, it is already past the moment when it occurred; information is always old news. This is the core effect of one-directional time sense; we cannot perceive information before it happens, is created, exists (that is the fascinating business of psychics, see Farsight, 3 Information, p. 1362, *infra*). Information is always in the past, the now is information which we perceive after it has already gone.

- **The Intelligence Puzzle:** During the wonderful summer I spent in battlefield intelligence school, I decided that intelligence is like three-dimensional party puzzles that drunk people play: The pieces keep moving; nobody is sure how many pieces there are supposed to be, and worse yet, nobody knows what the whole picture is supposed to look like when finished.

“The intelligence community will fight hard against a threat to its culture of avoiding open partisanship, former senior CIA operations officer John Sipher told NBC News. ‘It’s all about professionalism and taking the world as it is. There is no such thing as Democratic or Republican intelligence. It is what it is, no matter how inconvenient.’”

– Ken Dilanian and Pete Williams, “Intel officials worry Trump’s pick for top spy will politicize the job,” NBC News, July 29, 2019

“When it comes to the defense of our experiment in democracy and our way of life, ideology should have nothing to do with it. Whether asked to serve by a Democratic or a Republican, you serve. ‘Politics ends at the water’s edge.’”

– Gen. Jim Mattis (USMC Ret.) op-ed, “Jim Mattis: Duty, Democracy and the Threat of Tribalism,” Wall Street Journal, August 28, 2019

One-Way Mirror: Observation begins with the arrival of any friendly unit in the system. Observation occurs automatically whenever any ship or sovereign colony is in a system with a ship or colony not owned by the owner of the ship or sovereign colony (i.e. any friendly unit in the same system with alien units). ‘Observation’ reporting involves answers to the basic question of ‘what an entity is’ (see feature quote, 1 Information, bottom p. 1329, *supra*) or what an ‘appearance’ is. The answer depends on how close you want to get, and/or how long you are willing to wait around. Information in Galactic Space is obtained three ways: by automatic, passive Observation requiring no specific Power Activation (like your eyes and ears), and by Surveillance and/or Probing which requires an activation of the Special Operations Power for the purpose of Reconnaissance.

- ✓ “Sensors do not read radiation in the same way that communication receivers do. They do not read signals for meaning, but look for intensity and patterns over time among many signals.” – Dave Nilsen, “When Empires Fall II,” Challenge Magazine, Issue 69, February 1993.

- See Processing... Please Wait, 1 Information, p. 1330, *supra*.

- **ABBA Arrival:** Upon arrival in a starsystem, the owner of the arriving ships will automatically see all colonized planets (orbits, owners, but *not* numbers of population factors, Native

Population Types *or* enhancements *or* political status except Capital Colony) and will see ships at colony planets and ships in the system (owners, types, numbers, but *not* cargo or enhancements), and whether or not the colony planets have orbital installations (numbers, but not types). There is also a 50% chance to detect each combat (including Besieged Colonies) in progress in the system, providing the name of the combatants and the type of combat.

- ✓ The Concierge may carve out some limited exceptions to this rule, for example, a *Low Population Colony* (see 4 Taxation & Census, p. 326, *supra*) with little or no industry and no orbital installations, nothing in particular to give away its presence on a big wilderness planet, might be allowed to escape instant detection.
- ✓ Additionally, no report or a partially inaccurate report may be received if the arriving ship(s) initiate combat, join an ongoing combat, and especially if they are destroyed (e.g., by exploration Hazard Roll, see Then Never Comes, 3 Expansion, p. 907, *supra*).

Conversely, arriving ships will be seen and noted by any other position whose units are in the system, so arrival observation works both ways when someone is arriving and someone is already there. However, if a ship is destroyed during exploration, *it might not be noticed*.

- ✓ See discussion of GGDM’s generous sensor rules, Riding the T, 3 Temporal Technology, p. 828, *supra*. Note that ships which successfully enter the system surreptitiously will not be automatically detected by units already present.
- **Freeze Frame:** While Observation does not require a Power Activation, it does require submission of Regular Turn Actions from positions that indicate that they are ‘looking’ (i.e. still playing in the game): The information received from Observation is reported as part of the results of the Regular Turn Actions and represents a ‘snapshot,’ or photograph, of the situation in that place on the moment the results were generated. All news in space is old news.
- ✓ Ships executing Short Movement arrive at the end of the turn in which they began movement ... thus they will be present between their owner’s Regular Turns for all other positions to see on their Regular Turns. That’s a possible downside observation-wise, whereas, ships executing long movement are still *en-route* and arrive at the beginning of their Regular Turn, but are not there for critical ‘beginning of the turn’ supply activities . See Space Hop and Long Jump, 2 Movement, pp. 850-851, *supra*.

Observation reporting on Regular Turn results should not be confused with initiation of Combat by other positions on their Regular Turns that occur between your Regular Turns. A position *will always be notified when they are attacked* between their Regular Turns so that they can submit Combat Orders for the first Combat Round. See Capoiera, 3 Combat, p. 970, *supra*. This is necessary because GGDM runs on a continuous Regular Turn Cycle (see The Law of Periods, 2 The Streams of Time, p. 84, *supra*) and because Combat Rounds run independent of Regular Turns in GGDM (see Relativity, 2 The Streams of Time, p. 85, *supra*); i.e. ships arriving by Combat Movement that weren’t there before could initiate combat.

- ✓ When we see a picture of Alpha Centauri, we are viewing it as it was approximately 4 years ago. Information from Observation in GGDM gets old quickly due to the Turn Cycle. Things may happen, come and go, from the system that are never reported because they *occurred between Regular Turns* of the position that owns the observation ship or colony.

- Pistols & Posies, Patience: When the Special Operations Power is activated for the purpose of Reconnaissance, the position may use either an Act or a Scene, regardless of whether a sovereign colony is in the target system. See Acting Lessons, 1 Special Operations, p. 1274, *supra*. The position may choose to use a Scene on a sovereign colony in the target system if such exists, risking a possible Power Activation failure based on the Constructural Elements at that colony. However, using a *Scene*, instead of an Act, also *enhances* the possible results of Surveillance and Probing.
 - ✓ It is also possible that a position may choose to use a Scene because it is there and because no Acts are available on the Powerstrip or the available Act(s) is being used for additional Special Operations Power activations in the same Regular Turn.
- Went to a Garden Party: Enlightenment may be used in Special Operations Power Activations for the purpose of Reconnaissance, but cannot be used in regular Observation (for example, the 50% chance of detecting an ongoing Combat in the system) as no Power Activation is associated. Failure to obtain the information in a Reconnaissance activation is a clear ‘no’ result that will trigger use of Enlightenment if such has been assigned (see Harsh Mistress, 2 Colleges, p. 478, *supra*), if the unit involved has an active Epistemological Constructural Element (see Skool Tyme, 2 Constructural Elements, p. 190, *supra*).
 - ✓ It’s a cost-benefit risk calculation. Each Faculty used only affects one die roll result under certain situations. But you never know when that one reroll might provide the key information. You need to *look...*
- Private Eyes: ... are watching you! Activation of the Special Operations Power for the purpose of Reconnaissance must target all friendly units in a system where at least one friendly unit is present. For *each* friendly unit present, the Power Activation must designate either Surveillance or Probing. Both are possible in the same system in the same Regular Turn and can augment each other. All game units are capable of Surveillance to a greater or lesser degree, only ships, system boats and colonies with a Fighter Complement are capable of Probing. See discussion of game units, View from A Height and Fine Print, 1 Construction, both p. 660, *supra*. Units are *unable to participate* in the Reconnaissance activation if they are:
 - ✓ Currently engaged in combat, or ordered to initiate combat during the same Regular Turn as the Reconnaissance;
 - ✓ Ordered to Load or Unload anything at a Besieged Colony (i.e. Blockade Running, see 4 Commerce, p. 1233, *supra*);
 - ✓ A Besieged Colony (see 3 The Sidereal Stage, p. 124, *supra*);
 - ✓ Ordered to Land to create a new colony in the target system (see The Landing, 4 Expansion, p. 920, *supra*);
 - ✓ Ordered to initiate interstellar movement from the target system during the same turn as the Reconnaissance activation (see generally 1 Movement, 1 and 3 Expansion, 1 Combat, 1 Commerce, *supra*);
 - ✓ Loaded on a ship; that is, Ground Units, Fighters, Population Factors on ships have no observation/surveillance ability independent of the ship.

In short, if you are fighting, running, cowering, cargo, loading, landing or leaving, you are not able to engage in Reconnaissance.

- ✓ Ideally, with a computer assistant all eligible units in the target system will display so that boxes can be checked for either Surveillance or Probing. Failure to designate a unit for either might either be handled as default Surveillance or that the unit does not participate in the activation (if eligible, *ut supra*). Whichever way it is handled should be done consistently across all cases.

➤ Taking it all Down: In the clever sci-fi short, “Telescope” (2016) by Collin Davis & Matt Litwiller (DUST Channel on YouTube), images showing the past conditions of the Earth were captured by a ship jumping outward at FTL speeds. Surveillance in GGDM however, is not about the past – it’s a snapshot of now – but it might be useful sometimes to consider this a possible form of surveillance, past conditions might be captured in light reaching other stars by very fine-tuned equipment. All news in space is old news.

Units at a location that are assigned to Surveillance by activation of the Special Operations Power for the purpose of Reconnaissance may or will attempt to report observed events at their location that occur *between Regular Turns* that can be seen within their sphere. In short, Surveillance continues Observation between Regular Turns, turning the ‘snapshot’ into a short film, but the results are still only received and available on the *next* Regular Turn results. Sphere in this sense refers to their sphere of operations, that is, the Combat Type(s) in which they could engage/initiate as discussed in Keep Your Friends Close, Your Enemies Closer 3 Combat, p. 972, *supra*, if they were hypothetically able to do so (e.g., hypothetically in the case of Cargo Ships, Colony Transports, etc.).

- ✓ For example, a colony will naturally see anything that comes within its orbit or lands on the surface as it can be engaged as a defender in a Colony Combat or Ground Combat. A colony that has a Fighter Complement may engage in Ship Combat in system space and thus may report events in System Space during Surveillance. Ground Units, which may only engage in Ground Combat, will only see events on the surface of the planet where they are located; Ground Units on ships don’t see anything, *ut supra*.
 - At the discretion of the Concierge, Low Population Colonies (see 4 Taxation & Census, p. 326, *supra*) may not be able to notice ships that come into orbit at their planet, and even less likely ships entering their system (having only a high-school telescope). This is the flip side of not being noticed upon arrival, *ut supra*, by virtue of having little industry and no orbital installations. This is a subject well covered in science-fiction literature, e.g., Robert Sheckley’s “Skulking Permit” (1954) and the Twilight Zone episode, “On Thursday, We Leave for Home” (1963).
- ✓ Another example, a Cargo Ship can be attacked in Ship Combat, so its sphere for Surveillance is System Space and whatever might be observed at colonies since it can load and unload at colonies.

Events refer primarily in this case to overt Power Activations at that location by another position, as long as such could be noticed, e.g., ships arriving or leaving are likely to be noticed, Census Power activations might prompt a report of the approximate population of a colony to appropriate units on Surveillance, but recruiting Counter-Operations Missions wouldn’t be noticed. Events also include Combat Orders and results of Combat Rounds that can be seen.

- Field Reports: Surveillance automatically detects changes in all of the conditions apparent to basic observation (see ABBA Arrival, p. 1340, *ut supra*) – which may be the result of other positions’ Power Activations or Combat Orders – plus there is a 5% chance that each unit involved in the Surveillance may obtain a nugget of information not available to regular Observation. For each unit that could possibly observe the potential target (due to their sphere of observation, *ut supra*) there is a small chance that each of the following may be determined (each is treated as a group):
 - ✓ Number of population factors on each colony and Colony Ship.
 - ✓ Native Population Types present on each colonized planet (even if in Orbital Cities) and Colony Ships.
 - ✓ Colony political status (Capital Colonies are automatically known in Observation).
 - ✓ Enhancements currently on each colony (not colonized planet as they can be Balkanized), including Fighter Complements, Ground Units, and Industry.
 - ✓ Types and numbers of each colony’s current Orbital Platforms (Ship Yards, Orbital Cities, Orbital and System Defense Bases, unfinished Keels).
 - ✓ Cargo currently on each Cargo Ship or the contents of each Log Ship.
 - ✓ Enhancements on each ship present (this includes Fighter RPs).
 - I believe from the various questions that I have read online at Quora, Stackexchange, etc. that if ten units have a 5% chance each of success, they have about a 40% chance of success collectively. As I am un-schooled and a dunce, if this is incorrect or unsatisfactory in play, the percentages can be adjusted.⁴

Being located on or *at the same planet* as a colony engaged in Surveillance during the inter-turn period should *double the chances* of that unit obtaining information, i.e. colonies sharing the surface of a Balkanized world or ships loading, unloading, or transferring, or being built at that world.

- ✓ The Pirates broadcasters have noted many times that all of the teams have the same information, yet in pitching and defensive shifting, they come to different conclusions about the same hitters. So, even in terms of *objective statistical information*, there is interpretation. Even medical tests and imaging are ‘interpreted’ and subject to competing interpretations.⁵ For example, patients ask for a second opinion on critical medical decisions; consistency of opinion or interpretation from the same information is a bit of an issue that bedevils our civilization, and has since politics, war and ethics were invented. In baseball, it is commented that you can take stats and make them mean anything you want.
- One Is the Loneliest Number: There is no defense to Observation or Surveillance other than being alone. To share a system or a planet with aliens is to be exposed to automatic Observation and possible Surveillance (just as you have no expectation of privacy in a public place or walking down the street or posting to YouTube forums). The only way to avoid or correct the problem is to take action: someone has to leave.
 - ✓ “I’m getting tired of your meddling. This town ain’t big enough for the both of us and I’m going to give you 24 hours to get out. If I see you in Carabinas by this time tomorrow, it’s you or me!” – Nick Grindell, *The Western Code* (1932, IMDB quotes).

Note that being subjected to Observation or Surveillance cannot possibly act as a Conflict Check in Government Titles because they are passive and the position may not be aware they are occurring. However, there are several Conflict Checks relating to not sharing planets or even systems with aliens.

- Ground Support: If a Scene was used in the Reconnaissance activation instead of an Act, and a Power Failure did not prevent the activation, the base chance described above for Surveillance results is 8%, which can double to 16% if located on the same planet (*ut supra*).
 - ✓ Any realistic basis for the Scene enhancement is thin at best, perhaps local ‘ground support’ makes the resource difference in effective Surveillance. It is mostly a reward for the game mechanical risk of Power Activation failure.

- Compiling Dossiers: Observation and Reconnaissance reports (whether Surveillance or Probing) are secret information belonging only to the position that owns the units performing the task. Thus, other positions don’t know what has been seen, what other positions present may know or not know; this creates situations where cooperation and bluffing are possible in the game via player emails and informal diplomacy discussed in Greys Diplomacy, 1 Diplomacy, p. 1097, *supra*. The Concierge will not provide clarification or additional information.

Intelligence work is what the position players extract, interpret from the Observation and Surveillance information included in their Regular Turn results. For example, in a system with colonies and ships from several positions, a specific Scout Ship has been present for several Regular Turns (Scout Ships have *extended* OSL/OFL limitations, see Imperial Interstellar Scout Service, 3 Movement, p. 855, *supra*). On the next Regular Turn report it is not there. What happened? Did it leave, or was it destroyed, or was it scrapped? Informal diplomacy may answer these questions, depending on who you trust to tell the truth. However, if the position had Surveillance in the system, they may receive a report stating that the Scout departed, or perhaps that it was destroyed by another hostile position’s ships, perhaps indicating the start of a war. But in any case, unless it involves a direct attack on the position via initiation of Combat, none of this will be known with certainty until the next turn results.

- ✓ The Cold War was legendary for the surveillance games on both sides. I remember watching a news program or documentary where retired engineers at White Sands Proving Grounds spoke about testing jet engines. They knew when the Soviet satellites would pass over. In between, they’d roll the engines out to the concrete platform, run the tests, then take them back in the hanger before the Soviet satellite passed overhead. The Soviets would only know that they tested because of the heated air and concrete, but could not otherwise see what they were doing at White Sands.
 - It had become an important issue by the end of WWII, before satellite surveillance. Before the D-Day landings, the Allies carried out an elaborate deception plan called Operation Fortitude, including constructing a fake army commanded by General Patton, complete with command staff and rubber inflatable Sherman tanks. The bull wasn’t fooled though, because bulls are experts at ... bull, as in BS. According to Brian John Murphy, “Patton’s Ghost Army,” *America in WWII* (article undated), a bull charged and rammed one of the fake Sherman tanks used in the deception and the English farmer watched it deflate into a pile of rubber in his field.

- The Germans also used fog, forest and camouflage to disguise the buildup of armored spearhead forces from aerial reconnaissance flights prior to the initial attack at the Battle of the Bulge in December 1944.

“If the government is covering up knowledge of aliens, they are doing a better job of it than they do at anything else.” – Stephen Hawking

“We all know interspecies romance is weird.” – Tim Burton

Alien Probes: Surveillance works best when many units are present from the side performing the Surveillance (lots of eyes and ears, many angles, like a search for a fugitive or a missing child); it is thus less effective in situations where a side has only one ship, probably a Scout Ship, in the system and desires to obtain information on a target colony or fleet of ships very quickly.

This situation is filled by activation of the Special Operations Power for the purpose of Reconnaissance and assigning a ship or ships to Probing (i.e. ‘the quick and dirty’ solution). Both Surveillance and Probing can occur in the same Reconnaissance activation, but each unit involved can only do one or the other. All Probing is resolved before Surveillance at the same location; this is important when Enlightenment has been assigned to the Reconnaissance activation.

- ✓ Probing does not cause a Disruption Event at the target colony regardless of the outcome, see *Burning Sky*, 2 Disruption, p. 275, *supra*.
 - ✓ It is possible, though they are not mentioned above, for Ground Units to also engage in Probing, limited to opposing colonies or targets on the surface of the world where they are located. The Probing procedure below is written on the premise of Probing attempts from space, but could be adapted for Ground Unit Probing attempts, with the caveat that Fighter Complements would be much better for the same task.
- **Flyby:** Each ship (or System Boat) or Fighter Complement assigned to Probing must be given an objective. The objective must either be all ships of a target position in the system or a planet (not specific colony) by Orbit Number. Multiple units can be assigned to Probing the same objective forming a ‘reconnaissance in force’ at that location. Units assigned to Probing do not need to be able to initiate combat, thus Cargo Ships can Probe at great risk.
- ✓ Merriam-Webster online dictionary at *flyby*: **2a:** a flight of a spacecraft past a celestial body (such as Mars) close enough to obtain scientific data.
 - ✓ “The Abwehr had prying eyes, too: reconnaissance planes that flew at 33,000 feet over the English countryside trying to spot FUSAG units and record their activities and movements. The British and American air forces had to be careful to let the Luftwaffe snoop through to see the mock preparations on the ground, yet not let the flights seem so easy as to raise suspicions.” – Brian John Murphy, “Patton’s Ghost Army,” *America in WWII* (undated article).
- **Bloody Noses:** Each Probing attempt is resolved separately, even when multiple units are Probing the same objective. There is a 50% chance that each ‘combat unit’ or enhancements (i.e. Defense Bases, Fighter Complements) at the objective will *fire once* at the Probing unit. This fire will be *normal fire*, not expending Ship Missiles or other expendable enhancements

and all normal Combat Shifts apply (i.e. Scouts Defensive Shift). If multiple units Probe the same objective, the same defending units may attempt to fire at each Probing unit, a defender may have multiple fire opportunities during various Probing attempts.

- ✓ A Probing is a reconnaissance-in-force skirmish, it is a combat to those involved, thus Combat Shifts apply. It is not a Combat Power activation, however.
- ✓ If the Probing unit is a Fighter Complement, Close-in Defense Fire will occur; if the defending unit is a Fighter Complement, it will make an Interception Attempt with both Sorties on the Probing Unit; if both are Fighter Complements, a Dogfight will occur (see Dogfighting, 3 Carriers and Fighters, p. 1072, *supra*). Interception attempts in Probing only occur when the defending unit is a Fighter Complement, as regular units cannot Intercept Fighters but Fighters can Intercept regular units. *Id.*

Defensive fire occurs automatically, no Combat Power Activation is necessary or used on behalf of the defender in attempting to repel **Alien Probing**. Enlightenment cannot be used in defense against Probing. Targeting and resolution are handled automatically and firing units are determined randomly. The defender will be informed that Probing has occurred, *but not what was learned*, with a 50% chance that the assailant will be identified.

- ✓ It would be incredibly problematic to require the defender to have a Combat Power activation at that location to defend against Probing. Such would allow aggressors to burn off Combat Alerts by Probing.
 - ✓ It is possible that there will sometimes be no defense against Probing attempts. The target planet or ships may have no combat ability, or all defenders might fail their 50% chance to fire (flip a coin, get tails ten times in a row) or may simply miss with all of their fire attempts (like an 80s Miami Vice shootout scene) at the Probing unit.
- Never Tell Me The Odds: The Probing unit does not fire at the defenders, except that it may fire Close-in Defense against Intercepting Fighter Complements. The Probing action is finished when all of the shooting is done, no retreat is necessary or is considered to have occurred on either side. Enlightenment assigned to the Reconnaissance activation cannot help Probing units survive as Enlightenment can never be applied to opposing die rolls (see Army of Light, 2 Colleges, p. 479, *supra*), however, Close-in Defense against defending Fighter Complements may expend some Enlightenment assigned to the Reconnaissance.
- Results Rolling In: There are three possible results of Probing. If the Probing unit is not hit, it is successful, if the Probing unit is hit once, it is turned away, but not destroyed (a ‘hit’ in Probing is not destruction), and may report some information at a much lower chance of success. If the Probing unit is hit twice, it is destroyed. Engaged results from Fighter Complements have no effect, so both sorties will need to be successful to score a hit in Probing.
- ✓ The Probing unit is not trying to engage in combat, it is trying to avoid combat. The turned away result is a peel off because we are gonna get clobbered (like when the Death Star was operational), it’s a game of chicken in space. The Probing unit is likewise not trying to intimidate or scare off the target; the objective is to get a good scan.
- The S-2: The information received from Probing is determined individually per unit involved. If the result of the Probing was a success, the Probing unit has a 15% chance of learning information in each category outlined in Field Reports (*ut supra*, pp. 1343-1344) that applies to the sphere of the objective or target of the Probe. If the Probing attempt was

turned away, the chance is 5%. If the Probing unit was destroyed, no report will be received for that unit. If the Special Operations Reconnaissance activation for the Probing used a Scene instead of an Act, the chances above are doubled if the Power Activation did not fail. Finally, Enlightenment assigned to the Special Operations Power Activation may be used for the Probing unit's report if that unit has an active Epistemological Constructural Element (see Skool Tyme, 2 Constructural Elements, p. 190, *supra*).

- ✓ Perhaps the approximate equivalent to Probing in GGDM are the reconnaissance flyovers that countries have conducted since the 1950s. SLAR (side-looking airborne radar) was developed specifically so that reconnaissance aircraft could hug the national border or international water boundary without violating sovereign air space. I used to stand in the gun park and watch SR-71s take off in the late 1980s. The flyovers have always been controversial, but have so far not resulted in a war. The Soviets hated it and shot down a U-2 in 1960 as it flew over the Soviet Union. India continues to fly reconnaissance over Pakistan and I recall an incident, perhaps it was in 2017, where the Pakistanis were upset that an Indian reconnaissance aircraft went sonic leaving Pakistan and created a sonic boom. The Pakistani government felt it was a direct insult by India, intended to remind them (i.e. rub salt in the wound) that the Indian air forces were flying over their air space at will.

The Probing rules in GGDM are crude at best. There is much room for development of specialized abilities by players in this area (i.e. Colleges, Technologies). On the other hand, the situation in space might be different than flying over another country on Earth.

“It’s been estimated by some intelligence experts that Mr. Walker provided enough code-data information to alter significantly the balance of power between Russia and the United States.”

– John J. O’Connor, “American Spies in Pursuit of the American Dream,” *New York Times* archive, February 4, 1990

Family of Spies: John Anthony Walker, a Chief Warrant Officer of communications, spied for the Soviet Union from 1967 to 1976 when he resigned from the Navy, but by that time, was able to continue providing information through a spy ring consisting of friends and family members. He was arrested on May 20, 1985, and his son who was serving on the USS *Nimitz* was also arrested. Mr. Walker cooperated with authorities to reduce his son’s prison sentence to 25 years. His son was released on parole in 2000, Mr. Walker died in prison in 2014 and his older brother died in prison shortly before. His ex-wife was not prosecuted because she turned him in, and the last remaining member of the ring Sr. Chief Petty Officer Whitworth is still in prison in 2019.

ISpy: The Special Operations Power may be activated for the purpose of Information Operations to assist in garnering intelligence. Sometimes the information supplements or corroborates information received via diplomacy or observation, while at other times, the Information Operation is the only way to obtain the needed information.

- ✓ Information Operations are probably espionage, and that is undoubtedly how participants will envision them, but the term can also encompass an ‘eyes open, ears open’ approach – is it espionage if you happen to be in a public restaurant and overhear a conversation? Happens to reporters a lot. There is no expectation of privacy in a

public place; if someone takes a picture of you walking down the street, or you just happen to be in someone's photo or video, regardless of what you are doing (e.g., a drug deal, handing out flyers, walking your kid to the bus stop, going into a hotel with your mistress), that is not an invasion of privacy. Or spying. Being a tendentious pedant, I chose to call it Information Operations instead of the sexier term, espionage.

GGDM makes no distinction in Recruiting and Lodging Special Operations Missions (SOMs) for either Black-ops or Information Operations, any SOM can be used for either as long as it survives and it is not required to predesignate the intended use of the SOM. *This is purely a game mechanical convenience*, as there is a wide difference between the two.

- Information Operations: Information Operations are *automatically successful* in the sense some kind of information will be reported and no die rolls are involved for resolution, unless the target is protected (see Quartering Act and Secret Services, 3 Special Operations, pp. 1321, 1323 respectively, *supra*).
 - ✓ Enlightenment *may not be assigned* to Special Operations Power activations for the purpose of Information Operations. The operation is automatically successful and Enlightenment cannot be used to affect another position's die rolls (e.g., if the target is protected by COMs). See Army of Light, 2 Colleges, p. 479, *supra*.
 - ✓ Plausible Deniability (see 3 Special Operations, p. 1314, *supra*) procedures will also be followed for Information Operations to see if the operation was 'noticed' by the target and who they think did it.

Information Operations are only resolved as part of a Regular Turn Action and thus, if units in combat are targeted (that is, have Lodged SOMs) the information received will be as of the Regular Turn – a snapshot – there is no provision in GGDM for Information Operations to be resolved during a Combat Round, even by using a separate activation of the Special Operations Power for Treason (see 3 Special Operations, p. 1310, *supra*) which is only for Black-ops, even though it may be treasonous...

There are certain areas where Information Operations and Surveillance would seem to overlap. For example, why couldn't Surveillance collect information about **alien** language, culture, government, through listening and watching, picking up the media from a target colony or from ships? For game purposes, however, those are separate functions; someone with a lot of education and expertise has to sort through the data collected to extract information more complex than which species lives there or how many Fighters are on that Carrier.

- ✓ A position could conduct a Surveillance-like Information Operation by Lodging SOMs on a friendly ship, moving it to another system, and then conducting an Information Operation, possibly in conjunction with an actual Surveillance or Probing action (assuming the ship isn't destroyed).

Information Operations represent the slow accumulation of intelligence information (a book, in sports terms) not related to Surveillance or Probing (*ut supra*) – what we might call HumInt, ComInt, and maybe some TechInt.

- A Field Guide to Traitors & Spies: Although espionage is virtually synonymous with treason, it is not an activation of the Special Operations Power for the purpose of Treason as described in 3 Special Operations, p. 1310, *supra*. Treason in GGDM is more overt action.

- ✓ [Interview] “[Kim Philby] said to betray, you have to first belong, and I didn’t belong, I never belonged. I was a straight penetration agent, he said, and if the other side, in other words, the British, were foolish enough to believe my spiel, then that’s on them. It was their failure, not mine.” – Phillip Knightley (author), *The Spy Who Went into the Cold: Kim Philby, Soviet Super Spy* (documentary, 2013).

What did Benedict Arnold actually do to betray the cause? He had been court-martialed for profiteering from his command and publicly reprimanded by Gen. Washington, and was billed £1,000 by Congress in relation to the Quebec expedition. During this time, he secretly communicated with the British, tendering an offer to become a spy. He sold his home and transferred the money to London.⁶ Arnold sent letters to the British detailing troop movements, strengths, and other information.

He stopped by West Point on the way to Philadelphia and provided a report to the British. Upon learning that he might possibly be selected to command West Point, he offered to provide drawings and to surrender West Point to the British. The British agreed for £20,000. While in command of West Point, he degraded its defenses, rearranged troops in non-optimal deployment and wasted away supplies. Arnold met the British spy chief, Major Andre, in person and gave him drawings of West Point and wrote passes for him to transit the rebel lines, but the spy chief was captured by militia on the way back to New York (and was later executed). The scheme then unraveled, and Arnold fled; later he commanded the British force in the Fort Griswold massacre, though he was not personally present.⁷

- Reliability Rating: Information Operations have two distinct differences from Special Operations. First, Special Operations Missions (SOMs) used during Information Operations are not expended as in Black-ops (see Profile in Perfidy, 2 Special Operations, p. 1300, *supra*); a Lodged SOM may be used to gather intelligence over several Regular Turns, but like all Lodged SOMs, they will eventually ‘age-out’ and disappear (Melita Norwood was 88 years old when she was revealed as a spy, more than three decades after she quit spying) and may be eliminated by Counter-Operations (see Spy vs. Spy, 3 Special Operations, p. 1323, *supra*). Second, in Information Operations, the information received has a Reliability Rating.

- ✓ “Remember that intelligence is fundamentally a craft of uncertainty and of possibilities.” – Susan Gordon, CNN interview, December 3, 2019 (available on YouTube).

The Profile for an Information Operation must ask a specific question or set of questions, *and* set forth a specific area and/or location on which information is being sought. The more general or numerous the nature of the question or areas of inquiry, the less specific or reliable the information will be when received.

The resultant information report will be given a Reliability Rating of 1-10 by the Concierge where 10 is best. The Reliability Rating is, as the term suggests, a rating of how ‘reliable’ (true, accurate, current, timely, trustworthy) the information is deemed to be *from the viewpoint of the position receiving the information*. The Reliability Rating should never be taken as absolutely true, as the information may be more or less accurate, true, complete, current, or trustworthy than the rating suggests. Information is best when corroborated and when it paints a complete intelligence picture rather than when it is taken as single reports and facts.

- ✓ “Everything [all intelligence] is uncorroborated until the terrorist attack happens.” – Nicolle Wallace, MSNBC Dead-line: White House, July 2, 2020.

- ✓ The Reliability Rating is not random, it is a judgment call by the Concierge. Thus, there is no opportunity to use Enlightenment to affect Reliability Rating. The Concierge is not bound by his own Reliability Rating, true information may be given with a low Reliability Rating, it's only a perception point of the position's intelligence professionals. But, to mean anything in the game, it should approximately correlate.
- ✓ Game mechanically, Information Operation covers broadly all the ground that is not otherwise addressed in other activations of the Special Operations Power. Information Operations are, for example, the only way to obtain information on the Public Space – by asking the right questions – such as Cultural Pieces, Conflict Checks, and non-physical sorts of information *as it relates to the operational location*.

There is some small chance that the target of an Information Operation will be informed of the operation (see Plausible Deniability, 3 Special Operations, p. 1314, *supra*); this is more likely if the target of the operation was protected or if the place where the operation is conducted has a large number of Lodged Counter-Operation Missions.

- ✓ A major revision of the history of the Waterloo Campaign in 1815 (e.g., Waterloo Betrayed, Stephen M. Beckett, 2015) attributes Napoleon's defeat to spies and traitors who passed his plans to the Anglo-Prussian allies, giving them a 12-hour head start. See also, "Waterloo: The Truth Behind Napoleon's Final Defeat," HistoryMarche YouTube Channel, August 17, 2019, made in collaboration with Stephen Beckett.⁸
 - ✓ In GGDM terms then, Benedict Arnold was successful as an Information Operation but failed subsequently when activated for Treason (i.e. Black-ops). Using the Arnold SOM for Treason expended him as a SOM – this would have been true regardless of whether he was successful or not, his game would have been up either way and it was time for him to un-Lodge (fleeing downriver on the HMS Vulture). His SOM expenditure did not mean his death, but instead his removal from the situation or system where he had trust and authority (though most distrusted him already because they thought he was involved in a black market; and that he had a Tory wife) to another where he was never trusted or respected again.⁹
- Time After Time: Special Operations is one of the primary areas where limited Temporal Technology might be applied; time-traveling police, spies, special agents have always been a fascination of science fiction stories and games (e.g., Time Agent (1992)). Information Operations may be the safest place to apply temporal technology in Special Operations.
- ✓ If we had the ability to remote view (peeping) into the past (even if we were looking into the memory of someone who lived at that place and time), without physically going there, how could that create any paradoxes? Any resulting effects would be now and into the future, not altering the past. Of course there are social ramifications of this technology, in criminal justice at the least, but also in our beliefs about the nature of the universe and about our history. Imagine the opportunity to see inside the mind of a Mongol warrior during the sack of Baghdad, or memory of Elizabeth the Cuman, or learn what Friedrich Kritzinger actually said, remembered or thought at the Wannsee Conference? In an odd sense, the present would merge with the future and past. Except that we tend to change what we observe. The Heisenberg Uncertainty principle in its general suggestion, is one of the most intriguing ideas in a millennium about the nature of knowledge. It has found its way from physics to the social sciences:

- “Abstract. In several fields of social sciences, anecdotal evidence is collected that measuring a property of a population sample couples back to the behavior of the sample and changes its property.” – Peter W. Michor, “Uncertainty Principles in Social Sciences,” October 19, 2017.
- “The preliminary paper [Kashyap (2014)] titled The Uncertainty Principle of the Social Sciences postulates the Uncertainty Principle as follows: *Any generalization in the social sciences cannot be both popular and continue to yield accurate predictions, or in other words, the more popular a particular generalization in the social sciences, the less accurate will be the predictions it yields.* This paper then continues in a verbose way to define social interaction without becoming ever specific.” *Id.*¹⁰
- “Thorngate (1976) developed a postulate of commensurate complexity in which there are trade-offs among a theory being *general*, a theory being *accurate*, and a theory being *simple*. A theory cannot be all three simultaneously; general accurate theories are not simple, accurate simple theories are not general, and simple general theories are not accurate. Weick (1979) provides examples of each.” – John P. Bean (Indiana University), “Light and Shadow in Research Design,” Clifton F. Conrad & Ronald C. Serlin, Eds., The SAGE Handbook for Research in Education (2006), p. 354 (found on Google Books, emphasis in original).

Thorngate is the most direct social expression of Heisenberg. It is an interesting phenomenon of itself that once the idea was expressed concretely in physics it found application (if imperfect) in other intellectual areas. Almost as if it suddenly existed in a greater sense when it could be concretely expressed. But back to the subject at hand ... do you think the past is an eigenstate? Most do, like object permanence, it seems to be intuitive (however, consider the Rashomon Effect). But to be able to peep back in time, we’d need a different framework, and within that framework, maybe what we call history weaves through Many Worlds and is certain seeming only to us.

- ✓ T-Ships, discussed in Ghost Probabilities, 2 Temporal Technology, p. 818, *supra*, depend upon an encounter with the target in the present to go back in time a few minutes to ambush the target, creating a paradox. The phenomenology of the T-Ship is the same as for the rest of the one-direction-in-time universe, ultimately, the T-Ship gets pushed forward in time as it cannot continuously go backwards in time. Even H.G. Wells time machine surrendered to the forward push of time when not moving backwards in time. One might argue then that with the ability to look back in time, and have things appear to you which you were not there to see when they happened, might be useful to the T-Ship instead of jumping back in time creating paradoxes? Still, I don’t think this works well operationally, since any object that is seen back in time must also be experienced in the present of the T-Ship or it would be pointless. The results would be no different than back-projecting the flightpath of a ship or missile (we do this now, e.g., counter-battery radar).

“In and of itself, ignorance is not a problem. It is often rational and is an unavoidable part of the human condition. But ignorance becomes dangerous when individually rational ignorance leads to harmful collective outcomes. Sadly, that is often the case with political ignorance, and ignorance about scientific issues relevant to government policy.

From the standpoint of the individual voter, it makes sense to devote little effort to acquiring information about government and public policy, because the chance that her vote will make a difference is infinitesimally small. But such behavior can lead to terrible outcomes when an entire electorate is ignorant in this way. We shouldn't worry much about the fact that a small minority of Americans don't know where chocolate milk comes from. But we should take the problem of widespread political ignorance far more seriously."

– Illya Somin, "Public ignorance, brown cows, and the origins of chocolate milk," *The Washington Post*, June 16, 2017

Willful Ignorance: What the internet age has finally brought to the fore (even more so than the print revolution) is the human willful refusal to learn, to understand, and to know facts, especially those contrary to religious or political beliefs. As more and more of the world becomes connected, large swaths of humanity have access to billions of internet sites, millions in their own language, and others through translation.

Those people who have got by in the world in the past through willful ignorance – cynically complaining about everything they didn't understand, which was just about everything in their lives – have now had their pants yanked down around their knees and everyone can see them for the asses that they are, as the 2016 Presidential Election highlighted. The nature of the internet, not controlled by any sovereign (short of complete blackout and unhealthy isolation), has made knowledge on nearly any subject available to those who *look*. Hundreds of thousands of original works are available free in the public domain and are on the internet. Hundreds of millions of people spend time writing, explaining and arguing on the internet for free and freely about every possible subject.

- ✓ When I was young in the early 1980s, a man in his 50s told me that Florida was a desert – he had read an article about draining the swamps in Florida. He also thought that Canada was part of the United States. He informed me that Marines wore their Dress Blues under their camos in combat. He wasn't joking, he really believed it.

Taken together with all of the books in homes, schools, and public libraries, the only barrier to learning anything is a lack of will or desire. Nothing is stopping you from picking up a book and reading it, nothing is stopping you from getting on the internet (if you have access) and learning; there is no reason why, lacking a fancy illuminated degree from an institution, you cannot have a graduate level of knowledge in subjects of your interest and the ability to understand properly the subjects about which you care to argue (or even how to argue properly). Thus, for example, religious fundamentalist who don't understand the scientific process or students who attended religious high schools who do not understand the Ice Ages or the history of the rest of the world (because they are not in the Holy Books) have no reason other than willful ignorance. What you failed to learn in high school because you were more interested in goofing off, or too fucked up on drugs, you can learn by reading books or the internet if you have the will and then you can prove your knowledge by doing something useful. This applies to myself as well.

- ✓ See discussion of *Board of Education v. Pico*, 457 U.S. 853 (1982) about the removal of Desmond Morris' *The Naked Ape* (1967) and other books from the school library.
- Ice Ages: In my final semester of undergrad at college, I knew a young lady – also in her final semester – who was in the program to become a certified public school teacher (BA in Education, I think). She was required to do an elementary school presentation on the Ice

Ages, and wanted me to help her. Some way through the process, I figured out that she knew nothing at all about the Ice Ages. I was shocked to learn that she had never had classes on it in school! I couldn't imagine it, as I had my first classes on the Ice Ages in about 3rd or 4th grade and assumed it was a requirement of public schools, how could she have graduated high school without ever having a class on the Ice Ages? Well, she went to a religious high school, in fact, had spent her entire youth in religious primary schools, and apparently, they are not required to teach much science, or the Ice Age, or anything that conflicts with their religious beliefs; in fact, she didn't know much history of the world either if it didn't have to do with her religion. She wanted to be a public school teacher, so it's time you learned about the Ice Age, because you will have to teach it someday. She didn't want to learn about the Ice Ages or anything, she just wanted to get the project done. She could have gone to the college library and read about it in an encyclopedia article. How can you be a public school teacher if you have that attitude and never learned the subjects you will be required to teach?

- ✓ I discovered, disconcertingly, that she had not known what I had been talking about more than half the time that I had known her (as you can imagine from reading GGDM); it was apparently practice for the future of the GGDM project (GGDM started about five years before these events).
 - ✓ GGDM is in fact, the result of a process of reading, looking and figuring things out, making connections over a lifetime through a natural progression of subjects, and rejecting willful ignorance (i.e. *looking*). I was pretty ignorant in my youth, though precocious, but not for a lack of will, but for a lack of adult role models and direction, and for the confused place and time where I grew up, before the internet age.
- Raising the Dead: The 'dietary supplement' industry is an epitome of willful ignorance: Foodstuffs sold and classified as nutritional or dietary supplements (e.g., kombucha) are unregulated and generally unproven by credible trials. This is a form of intentionally not looking, of willful ignorance for profit. Absent testing, the manufacturers, retailers and promoters of 'cures' and dietary supplements can claim any health benefit short of raising the dead. And leave it to others to disprove it, and they can always dispute and criticize the tests as biased. They don't want to have to 'hide' contrary empirical data that can be discovered later in litigation (e.g., as happened in tobacco, phospho-soda, and asbestos). The longest running human willful ignorance is the intentional failure to obtain confirming empirical data.
- ✓ Glaceau Smartwater, one of the top-selling distilled bottled water brands in the United States has been criticized for having no scientific or empirical backing for whatever vague health claims they are making to consumers. And you can bet they are not going to go looking...

“Mr. Williams worked for a Kentucky law firm that represented Brown & Williamson Tobacco, now part of R.J. Reynolds. He leaked thousands of pages of internal memos and studies concerning smoking and health that provided ammunition to tobacco opponents. He had copied the documents surreptitiously starting in 1988, and they were made public in 1994. The information made national headlines. According to news reports, the information showed that Brown & Williamson executives knew decades earlier that nicotine was addictive and that they had funneled potentially damaging documents to lawyers to keep them secret. ...

Mike Moore, Mississippi's attorney general during that era, was at the forefront of the legal fight against the tobacco industry. 'The now famous Brown & Williamson documents that Merrell was able to provide us, under extraordinary circumstances and threat, changed the course of our litigation,' Moore said in an e-mail. 'We got on a plane and took those documents to Congress and the FDA,' he said, referring to the U.S. Food and Drug Administration. 'The three big lies – cigarettes don't cause cancer, nicotine is not addictive and 'we don't market to kids' – were all refuted by the B&W documents Merrell obtained,' Moore said."

– Bruce Schreiner, “Merrell Williams Jr., Kentucky paralegal who became tobacco whistleblower, dies at 72,” *Washington Post*, November 27, 2013

The Big Three Lies: The Merrell Williams case is an ethical issue that was discussed in paralegal school. Law firms will maintain that there is an absolute duty of confidentiality to the client, forever, even if that client is breaking the law or hiding evidence. Merrell Williams had also signed a confidentiality agreement. On the other side are the various concepts and ethical considerations – reinforced by the experience of WWII – attached to those who are in a position, have the opportunity, to expose massive lies, cover-ups, dangers, and to improve public health, e.g., Henrik Ibsen's “An Enemy of the People” (1882).¹¹ Mr. Williams, a smoker, believed that he had heart disease from smoking (SourceWatch wiki) and hoped to use the documents to sue the tobacco industry (but he would have a conflict of interest problem, probably, at the least) and according to the *Washington Post* article (*Id.*) he did die of a heart attack at age 72.

- ✓ Later... “Onetime Brown & Williamson executive Jeffrey Wigand revealed industry secrets to the CBS news show ‘60 Minutes.’ His role inspired the 1999 movie ‘The Insider,’ which focused on a battle within CBS over whether to air the ‘60 Minutes’ report about Wigand’s allegations that tobacco companies manipulated nicotine levels in cigarettes and lied about their addictive power.” – *Id.*, *Washington Post*.

For the record, the ABA-approved Paralegal Institute is going to teach what the legal profession wants them to say, but my recollection of the discussion is that the instructor wasn't too forceful about it. It is difficult to say with force and conviction – and a straight face, like emphatically insisting that the Easter Bunny is real – to a class of professional adults that Mr. Williams was wrong when the Defendants were lying to the court and to government agencies (through their lawyers who conspired to help them hide the damning documents), to the media, to Congress, and to the entire world and they would have continued to do so *but for* the actions of Mr. Williams (however wrong those may have been).

- ✓ There will be whistleblowers as long as business and government cannot be trusted.

There were many unclean hands all around in this one, but somehow the end result ‘came out right.’ The tobacco documents in a box arrived ‘mysteriously’ on the doorstep of Dr. Stanton Arnold Glantz at UC San Francisco; Dr. Glantz was a leading anti-smoking campaigner:

- ✓ “Merrell Williams, Jr. was the Louisville, Kentucky document review analyst who is often erroneously credited with having mailed the famous Brown & Williamson (BW) ‘Mr. Butts’ documents to Stanton Arnold Glantz, Professor of Medicine at the Institute for Health Policy Studies at the University of California San Francisco. The papers arrived at Dr. Glantz’s office on May 12, 1994 from an anonymous sender identified on the box only as ‘Mr. Butts.’ They described B&W’s internal scientific research, marketing, and corporate policies from the 1960s to the 1980s, and included

studies reporting on the tobacco industry’s internal knowledge of the health effects and addictive properties of nicotine.” (SourceWatch wiki, *Id.*)

- ✓ “[Merrell Williams] was aware that the information, if revealed, could potentially be explosive. Williams secretly copied hundreds of pages of the documents to which he had access, and mailed backup copies to a college friend, Nina Selz, for safe keeping in case something happened to him.” *Id.*

“The Instrumentality passes dark knowledge to its staff, things not usually understood in the inhabited world, things prohibited to ordinary men and women, because the officers of the Instrumentality, the captains and the sub-chiefs and the chiefs, must know their jobs. If they do not, all of mankind might perish.”

– Cordwainer Smith, “The Crime and Glory of Captain Suzdal” (1964)

Endnotes.

¹ Citation: “Reckless, outrageous, and undignified behavior has become excused and countenanced as ‘telling it like it is,’ when it is actually just reckless, outrageous and undignified.” – Sen. Jeff Flake, “I Will Not Be Complicit” speech on the Senate Floor, October 25, 2017.

- ✓ Former President Obama and Sen. Jeff Flake, on opposite sides of the political aisle used the same phrases and made nearly the same point publically, less than two years apart.

² Commentary: I am certainly not an expert in any of the forms of anarchism or anarcho-thought, and I am sure that Noam Chomsky wrote many impressive things that I have not read. But what I find objectionable are the simple-minded caricatures of anarchism that seek to dial back the clock to an idealized uchronic time or that are anarchism for the sake of anarchism. The same objection is expressed in GGDM in relation to reactionary religious beliefs.

³ Commentary: In military intelligence school, it was emphasized repeatedly that information does no good if not passed along, if someone sits on it. It’s not a little kingdom that can be hoarded. The same is true in science.

⁴ Commentary: You might naturally think that if I were more mathematical, GGDM would have been different or even not at all. That may or may not be a good thing depending on your view... A math genius would have gone about it differently. This speaks not to alien manipulation, pre-destiny, divine mission, being a special person, but rather to the value of diversity: There are plenty of math and computational prodigies in the world as fits our times.

⁵ Citation: “How does my doctor know if I have the flu? Believe it or not, most of the time your doctor knows the moment he sets eyes on you whether or not you have the flu. ... Essentially, your doctor sets his eyes on you and thinks, ‘This person appears to have been hit by a truck.’ Once he has verified that you have not been hit by a truck, he will conclude that you have the flu. Sometimes, for show, your doctor may order a confirmatory rapid influenza swab. However, these tests have a surprising high rate of false positives and false negatives. Thus, if it returns positive in a person who appears to have been hit by a truck he will pat you on the back and say, ‘See what I said, you’ve got the flu!’ If it returns negative, he will explain, ‘Well, you can’t really rely on these things anyway! I knew you had the flu the moment I set eyes on you.’” – Dr. Peter Lazzopina, “How does my doctor know if I have the flu?” Frontier Direct Primary Care website (Harlingen, TX), September 18, 2018.

⁶ Commentary: We had a case like that, the Defendant sold his home to his friend to avoid having it taken in judgment and then continued to live there, paying rent. He claimed that he wanted to be rid of the mortgage in anticipation of the judgment against him, but in reality, his rent payment was much more than his prior mortgage payment. He had also sold the house at much less than market value, it was probably a sham sale, with the agreement that he could ‘buy’ his house back later. I think the defendant fled the country shortly afterward. Like Benedict Arnold.

⁷ Commentary: Every schoolchild for 200 years has known ‘what Benedict Arnold did.’ Rarely is his service and generalship given much detail in such lessons. His treason has completely overshadowed his battlefield victories.

⁸ Commentary: [Narrator] “The Philby mold was now a sorry sight. Isolated, unemployed and unhappy, he might just as well have been in jail.” – The Spy Who Went into the Cold: Kim Philby, Soviet Super Spy (documentary, 2013).

- ✓ Many people were angry that Kim Philby had not been arrested and sent to prison ... he defected to Moscow where he was kept under strict house arrest by the KGB in a fully controlled flat they provided.

⁹ Citation: “Only a few weeks after learning of Arnold’s treason, General George Washington enlisted a Continental Army sergeant major named John Champe in a daring mission to capture him from behind enemy lines. The plan required Champe to stage a defection from the colonials and join up with the British. Once in enemy-occupied New York, he was to pose as a turncoat, cozy up to Arnold and then work with local spies to spirit him away to New Jersey, where Washington planned ‘to make a public example of him.’ The scheme very nearly worked. Champe fooled the British and even won an introduction to Arnold, who asked him to join his unit. Yet on the very same night that Champe and his accomplices were scheduled to make their move, Arnold was ordered to leave town on a campaign against the southern colonies. His plan foiled, Champe had no choice but to join in on the mission. He would continue to masquerade as a redcoat for several months before finally sneaking back to the Continental lines.” – Evan Andrews, “9 Things You May Not Know About Benedict Arnold,” January 13, 2016 (updated December 21, 2018), History Channel (history.com). [\[This might make a great movie!\]](#)

- ✓ “After donning a British uniform, Arnold spent 1781 leading raids against Richmond, Virginia and New London, Connecticut, both of which were sacked and burned. He settled in London after the American Revolution ended, but received a chilly welcome from his new countrymen, many of whom considered him an unprincipled mercenary whose actions had led to the death of the heroic Major Andre. Arnold and his wife were greeted with hisses when they attended the theater, and he was lambasted in the English press and blocked from taking up positions in the army and the East India Company. Having only received 6,000 of the 20,000 pounds he’d demanded for switching sides, Arnold eventually resumed his old career as a merchant ship-owner in Canada and the Caribbean. When he died in 1801 at the age of 60, he was buried without military honors.” *Id.*

¹⁰ Citation: “The Uncertainty Principle of the Social Sciences - Quantum Inspiration, Theoretical Investigation and Empirical Insights. The more precisely the position (of some particle) is determined, the less precisely the momentum (of that particle) is known in this instant, and vice versa. -- Heisenberg, uncertainty paper, 1927. Inspired by the Heisenberg Uncertainty Principle for sub-atomic particles in Quantum Mechanics, we postulate the Uncertainty Principle of the Social Sciences as follows: ‘Any generalization in the social sciences cannot be both popular and continue to yield accurate predictions, or in other words, the more popular a particular generalization in the social sciences, the less accurate will be the predictions it yields.’

When we compare the central tenets of the two principles, a striking commonality emerges. This has to do with how each system is affected by efforts at increasing the accuracy of measurements for one variable, resulting in decreased accuracy in knowing the other variable. The Uncertainty Principle of the Social Sciences, thus stated, in terms of popularity and accuracy of predictions, primarily deals with the scope and limitations of any relationships we uncover in social systems. We lay the groundwork for a theoretical framework towards measuring and understanding the Uncertainty Principle of the Social Sciences.

Two elements seem to immediately contribute towards this uncertainty; one is the number of participants in the social system and the other is the number of possible states the predicted outcome can take. The simplifying assumption here is that we can identify [sic] all the possible predicted outcomes and participants unambiguously. We will attempt to create an Uncertainty Index, using the variables mentioned above, for any social system that captures the difficulty inherent in making predictions regarding this system. In certain instances, we will see that it is important to distinguish between the number of participants in the social system and the number of participants in the social system that are aware of the particular relationship that is expected to yield a prediction. We then look at different social systems with a view of predicting various outcomes in these systems and how the accuracy of the predictions change as more participants become aware of the generalizations that yield these predictions.

We begin this exploration by starting with simple social systems and increasing the complexity in terms of the range of possible outcomes and the number of participants. Whether the Heisenberg Uncertainty Principle is the ultimate cause of the Uncertainty Principle of the Social Sciences, or, if there is some relationship between the two is a topic better saved for another time.” – Ravi Kashyap (City University of Hong Kong), abstract of “The Uncertainty Principle of the Social Sciences,” on researchgate.com, published in SSRN Electronic Journal, January 2014.

¹¹ Commentary & Citation: A FINRA arbitrator (who was also a FAA flight instructor and investigator) at a hearing mentioned that prior to take off of Aloha Airlines Flight 243 on April 28, 1988, a stewardess had noticed a crack in the fuselage but didn’t say anything because she was afraid of embarrassing the crew and her employer. The top of the fuselage over the first class section came off in mid-flight at 24,000 feet, explosively decompressing the passenger cabin. One flight attendant was lost, 65 people were injured, eight of them seriously. The incident had been recounted in a made-for-TV movie that I watched when it first aired in 1990. The point she was making, relating to the instant matter of the hearing, was what happens when people see things that are wrong and don’t speak up.