

Rebuilding some order in the chaos. Problems of the COVID surgeon

Reconstruir algún orden en el caos. Problemas del cirujano COVID

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ABSTRACT

This article discusses the chaos of the surgeon and the various issues facing the COVID-19 pandemic. It addresses several problems. One, that medical controversies have become disputes and public policies based on occurrences, omissions, and Estate rhetoric. Two, how the excess of information from heterogeneous and poor quality of thousands of publications of poorly done studies, of conflicts of logic between methodology and conclusions, and of false or fraudulent results, is difficult to process and produces saturation and confusion. And finally, the role of practical experience, recommendations, and criteria that each surgeon will have to assume to find a personal order in the chaos is discussed.

RESUMEN

Este artículo trata el caos del cirujano y los varios problemas que enfrenta ante la pandemia de COVID-19. Aborda varios problemas. Uno, que las controversias médicas se han convertido en disputas y políticas públicas a base de ocurrencias, omisiones y retóricas de Estado. Dos, cómo el exceso de información—de calidad heterogénea e incompleta, de miles de publicaciones de estudios mal hechos, de conflictos de lógica entre metodología y conclusiones y de resultados falsos o fraudulentos—es difícil de procesar y produce saturación y confusión. Finalmente, se discute el papel de la experiencia práctica, de las recomendaciones y de los criterios que cada cirujano deberá asumir para encontrar un orden personal en el caos.

Any attempt to organize journal science into a unified whole would soon encounter numerous difficulties. [...] Journal science bears, therefore, the provisional and the personal stamp. [...] If fact is understood to mean only the fixed and proven, then it exists only in handbook science.
(Ludwik Fleck, 1935)¹

SCIENTIFIC CONTROVERSIES

Science advances through controversies arising from the publication of experimental and observational results. However, the proof burden may be subject to technical and instrumental refinement and based on evidence not yet available at some point in the controversy.²

Everything is provisional in journal science. At best, it is the product of the consensus of a few experts. In this COVID-19 pandemic, nothing is yet fixed, handbook, or textbook science.¹

What hypotheses can stand as scientific facts, the quality of evidence, replication of experiments, refereeing mechanisms and peer reviews are all controversial.³ Above all, long time is required for confirmation or refutation.

CONTROVERSIES, PUBLIC POLICIES, OCCURRENCES AND SERENDIPITIES

When medical controversies come to public, the argumentative disorder is contaminated with the opinions of those who do not

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understand scientific research, how it operates, nor its limitations. There is a gap between what studies “say” and what the officials who implement public health policies interpret.

Without understanding specialized publications, without background knowledge to face the epistemic challenge, with mixtures of incoherent beliefs and even magical thinking and diverse interests, they turn controversies into disputes of all kinds.

The entanglements, which could have been solved with foresight and prudence, have become rhetoric by officials to *dilute the public perception* of the problem, so as not to create alarm, instead of forming coherent general recommendations.

Rulers and officials have designed contradictory policies, between hesitations and unsubstantiated ideas, from obligatory to optional rigor, which can be neither one nor the other without having made provisions for economic and social support for most of the population living in poverty and extreme poverty.

That majority, a workforce without education, social security, or access to health services⁴ – previously insufficient and now saturated – cannot understand or comply those provisions.

The paternalism of the enlightened increases the general confusion when several officials still appear in press conferences and massive events without any protection, united in an *ideological herd* immunity that is not immune to contagion either. To dissociate speeches from actions is to send a confusing double message.

Conflicts of interest between financial and public health advisors will have a very serious social impact. The dispute over whether to privilege health or economics is a “false dilemma”. The hasty reopening will have produced more cases, deaths, and economic damage,⁵ and it has become a very costly mistake that will have a boomerang effect for years to come.^{6,7}

In such a conflict of interests and longstanding idleness, health workers, ignored or minimally supplied, in addition to buying supplies with their own resources, have had to manufacture and recycle masks and personal protective equipment (PPE) with various serendipities, from washing to baking them.^{8,9} Faced with risk and deficient policies, it is

necessary to improvise. The proverb “adapt or die” applies here.

THE TSUNAMI OF INFORMATION

Information on SARS-CoV-2 transmission, contagion, and the multisystem disease it produces has become in a few months a “tsunami of articles”, accounting more than 5,000 per week, 31,000 by the end of May, and 52,000 by mid-June 2020, which are impossible to scrutinize and evaluate despite purpose-built artificial intelligence (AI) tools.¹⁰ They are published online before peer review, with some warning of “publication online” [*ePub ahead of print*] or “draft” [*pre-proof*], in a rapid dissemination effort whose disadvantage is the sheer volume.

There is a COVID-19 *Open Research Dataset (COVID-19 Open Research Dataset, COR-19)* that includes more than 128,000 peer-reviewed and preprint articles and previous studies on coronaviruses.¹¹ There is also a *Novel Coronavirus Information Center* for open access to research and news published by Elsevier.¹²

The issues with such a large amount of information are several, such as the lack of time to read them, the difficulty of separating the gold from the dross, the fact that 20% of them are not free and less than 50% provide the full text. Much of the literature is inaccessible to physicians or AI programs.

On the other hand, AI algorithms are not always accurate and the quality of what is published is heterogeneous; most are only commentaries, or poor-quality models and protocols. Physicians have preferred to resort to traditional methods, newsletters from different societies, journals with great tradition and prestige, and word-of-mouth recommendation.¹⁰

The value of information technologies lies in the fact that they can calm the discordance between old beliefs and new, anxiety-producing information.¹³ But much of the online literature lacks quality, and we must add the enormous amount of pseudoscience that proliferates in language that is simple, convincing, and attractive not only to the sick, but also to the unwary physician.

It is not impossible for physicians to be tempted to take shortcuts and cut corners in their analysis. The ability to think critically affects the way we act with “smart” technology. Phones and computers can serve as a “second brain” to lighten thinking, but they can affect, for the worse, our will to believe and our worldview.¹⁴ Being a physician does not mean being immune to intellectual garbage.

In chaos there are rules worth remembering; the 80/20 rule, erroneously called the Pareto Principle, reformulated by Juran as “the little vital and the much trivial”.¹⁵ Or the Sturgeon’s law, which stipulates that “nothing is always absolutely so, [that] ninety percent of everything is garbage” [my translation].¹⁶

For years there has been another pandemic, the “*morbis fraudulentus*”.¹⁷ A published article is a published article. Whatever it says, it fattens journals and curricula vitae with bullshit that is difficult to verify. Bullshit, without euphemisms or quotation marks, has increased and spreads with communication technologies.^{18,19}

Daniel Dennett warns against the use of “*profundities*” that at first glance are “manifestly false but would be crucial *if they were true* [or on the other hand] are true but trivial”.²⁰ (*Italics* are mine) Discard them requires intelligence, background knowledge, the ability to detect conflicts between the logical validity of a study’s methodology and its conclusions and, above all, the willingness to analyze conscientiously what is read.

Mention should also be made of online discussions, which have proliferated to a saturation point. They have several limitations; slow rhythms, they consume more hours compared to literature selection processes, there can be several in only one day, and time is invested in receiving information of unequal and redundant quality, since we all drink from almost the same sources. The same recurring topics and opinions also saturate.

EVIDENCE, EXPERIENCE, CRITERIA, CONSENSUS, AND RECOMMENDATIONS

When evidence is scarce, is produced slowly, or the information is so extensive that it surpasses human capacity, experience gains

value. The American College of Surgeons²¹ has issued recommendations on cancellation or prioritization of elective procedures. But the *Society of American Gastrointestinal and Endoscopic Surgeons* (SAGES) specifies on its website that “these are not formal guidelines, and due to time constraints, *they have not been reviewed and authenticated using standard rigorous processes*”.²² (*Italics* are mine.)

Despite the recommendation to perform rapid serological tests on all candidates for surgical intervention and, even more so, *regularly on all* health care workers, not only for the protection to which they are entitled, but also to evaluate which hospitals can work “free” [*sic*] of COVID,²³⁻²⁵ in Mexico they have been rejected on the grounds that they are not sensitive enough and that “there is no technical, scientific, logical, automatic connection between the number of tests and the success of control”. [*sic*]²⁶

Asymptomatic infections have already been documented in healthcare workers in Belgium and the UK, even when wearing masks and PPE. In the first study, the majority who tested positive for IgG (75%) recalled having previous symptoms; most commonly, anosmia, fever, and cough.²⁷ In the other study, all those who had worked in COVID environments tested positive for viral genome analysis, but so did 66% of those who worked in “Non COVID units”. [*sic*]²⁸

Challenges include increased diagnostic testing capacity, logistic problems in public hospitals, staff turnover times, and decreased workforce if a good number of them were to test positive.²⁸ But if absence of evidence is not evidence of absence, then a *non-sensitive test is more sensitive than no test at all*. Physicians and patients infect each other, and both hospitalized patients and healthcare workers should be considered at-risk populations.

At the height of the contagion, the surgeon, who is not an epidemiologist accustomed to mechanisms, devices and protection protocols that do not work if they are not used correctly, and for which he was never trained, is facing non-familiar situations. Recent epidemics, limited to distant regions, have been attended by others.

Before thinking about elective surgery, as the source of his/her main income, and even

if emotionally his/her head is on how he/she is going to survive the upcoming recession, he/she must think rationally, how not to get caught in the sea of viruses and lose everything. Everything' can mean not only the income, but also life. To do this, the surgeon must first train and master PPE techniques and movement protocols in the operating room.

There are recommendations, protocols, and checklists for *COVID surgeon safety* arising from international organizations.²⁹⁻³¹ Some national associations have issued relevant algorithms, policies, and procedures,³² but not all hospitals have the financial capabilities for compliance. Each team will have to adjust to the lack of national foresight, to the trial-and-error process, and to its learning curve.

I am not saying that it is easy, and even less so in a catastrophic situation. I am saying that an adequate adaptation implies *the deliberate exercise of postponing some emotions*. Humans are not Aristotelian, meaning "rational by nature" but, as has been demonstrated, we are poor processors of information. To maintain emotional stability, we are averse to change and justify our beliefs and intuitions.³³⁻³⁵

Light judgment and quick conclusions are efficient when they are likely to be correct, save time, and the costs of a possible error are acceptable. But light judgment is risky when the situation is uncertain, the stakes are high, and there is little time to gather and process information. In such circumstances, intuitive errors can be prevented by rational, deliberate analysis, and thinking slowly.³⁶

THE RASHOMON EFFECT

This scenario presents *the Rashomon effect*, which derives from the short story *In the Forest*, in which Ryunosuke Akutagawa³⁷ recounts a murder from several different testimonies, including that of the dead man (through a medium), and leaves the reader the task of constructing conclusions, without knowing exactly what happened.

From a failed State, with administrative disorder, with policies arising from the immediacy of the deficient count of daily deaths, a collapsed health system with no coordination to provide indispensable inputs

with the appropriate quality, even less to establish standards, and with redundant rhetoric, the surgeon can expect nothing more than a Rashomon effect.

USEFUL FICTIONS

It is a fact that there are surgeons in the guild who are deficient in *lingua franca*, who resort only to information in Spanish. It is natural for some to expect a guide or Mexican Official Norm (*Norma Oficial Mexicana* [NOM]) on any aspect related to COVID-19 –from tracing to protocols, to whatever you want, all of which may take years and is not exempt from being incomprehensible.³⁸

What can be done? Assume little known realities and disguise them as *useful fictions*, as provisional hypotheses. Since the Middle Ages they were known as *fictio rationis*, or the instruments necessary for certain forms of reasoning, situations that we assume "as if", as if they were true, as hypothetical realities.

And here comes the interesting thing; in uncertainty it cannot be said that "they are", but neither can it be said that "they are not". They can be used "with awareness of their falsity, but at the same time [while gathering sufficient evidence] with awareness of their fruitfulness".³⁹ (*Italics are mine.*)

As a rule of thumb, the useful fiction is to assume that "every patient (and every hospital territory) is *COVID positive* until proven otherwise". Safety itself will depend on it.

Assuming that everything is COVID positive implies to develop skills and adaptive measures against the inefficiency and abandonment of the State. Those skills are three: resilience, which is the ability to recover in the face of an adverse situation; creativity, that implies constant imagination to solve practical problems; and solidarity cooperation, being the only thing that will alleviate the orphanhood of a State that does not fulfill its social contract.

A PARADOX IN CHAOS

A paradox brings together two apparently irreconcilable and opposing ideas, but with a "deep and surprising coherence in its figurative sense".⁴⁰

Two quotations from Heraclitus of Ephesus, trite and perhaps little thought, are paradoxes. His fragment 12 says “to anyone who enters the same river different waters are always flowing”. Fragment 6 says that the sun “is not new every day, but continually new”.^{41,42}

If we connect these fragments with Fleck’s epigraph, it is easy to realize how useless it is to pursue the fixed. Everything alive is changeable, except our stubborn will to seek and want to live certainties.

At the beginning of this pandemic, despite the solidarity of the guilds and not of the public institutions, every surgeon is, paradoxically, *alone in the face of chaos*. This applies not only for the academic and teaching surgeon, but also for the common surgeon, for whom surgery was *simply* a way of making a living. In order to adapt, he or she must make practical decisions, based on heuristics and his or her own criteria, which are not exempt from error.³⁹⁻³⁵

It is easy then to see again the problem, well tangible and not philosophical, which is the gap between evidence and experience. Each surgeon will face the challenge of establishing *his or her best practices*.

To survive the general chaos, each surgeon will have to build *his or her own personal order*.

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