



Dealing with loss of life across the spectrum of humankind

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Published online: 16 June 2020

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“We knew the world would not be the same. A few people laughed, a few people cried. Most people were silent.”

—J. Robert Oppenheimer

Loss of life of the magnitude witnessed after the bombings at Hiroshima and Nagasaki was but one consequence of the nuclear holocaust enabled by the scientific breakthrough of the Manhattan Project. For Oppenheimer, it was the beginning of the end. How scientific breakthroughs are heralded or denigrated by today’s societies depends mostly on the truthiness factor accorded by professionals willing to acknowledge the limitations and weaknesses of their approach and the conditions of the times. Loss of life is, sadly, very much a matter of the times. And, fortunately, societies can no longer afford to choose silence in a world being ravaged by COVID-19 and inequality and racism in these troubled days.

Just as the world has been measurably impacted by the millions of new lives enabled by reproductive medicine and ARTs, the irony at hand within our own “species space” is fostered by our own ineptitude to reproduce successfully without medical assistance. Taking a critical look at the subject of pregnancy loss was the charge of the most recent Capri Workshop Group held last fall, and the summary of that meeting was brought to our readership’s attention last month as both a guide to understanding some of the truths that have permeated our profession and as a sentinel to concerns about access to care (*Early pregnancy loss: the default outcome for fertilized human oocytes*, <https://doi.org/10.1007/s10815-020-01749>). Far from resolved from an etiological or biological perspective, and hardly a topic short on rhetoric, pointing a finger at causality factors has become a less than a scientific exercise and more a matter of deep-pocket commercialism.

But knowing what our reproductive limits are as the aging and threatened species we have become remains much more than an academic pursuit. So is it that Wilcox and colleagues bring to bear on the subject of human fecundity perhaps the most thorough and engaging treatment to have been made available for public consumption in years (1). Among the pearls of wisdom they cast is just how the history of this field evolved from the decades of research engaged providing at best inferences based on the evidence available at the time—from missed menses to having sensitive measures of hCG. Wilcox and colleagues have come a long way with their insightful analysis for which we should all be grateful. A long way indeed from the days and images of the infamous “egg hunts” of Hertig and Rock that still grace the digitized pages of contemporary human embryology text books (2) and which prompt many a heated conversation when looking back from our lofty ethical standards of today(3).

For many today, Oppenheimer’s pronouncement of an altered world bespeaks of both loss and ambiguity as we await the changes needed to rectify everything from practice patterns to access to care to a sense of stability and security within the world order so desperately sought. For our own part, within the domain of reproductive medicine, and from the building blocks of basic science through to new diagnostics and affordable treatment plans, putting the facts as we know them within the fragile limits of our evolving technologies and perilous platforms to work for a better outcome will require a more robust level of skepticism than we have become accustomed to. Why? ARTs has become a discipline enabling the making of new lives for those less fortunate than the many whose wishes to have a family are met without medical intervention. And to achieve that end, we must rely upon the integrity and honesty of the scientific enterprise and the discretionary bottleneck defining current publication standards.

In this light, we offer our readership a reality check with the article by Liao et al. revisiting the worrisome subject of statistical significance and our ever-growing reliance on making strong inferences from the unobservable (When “facts” are not facts: what does *p* value really mean, and how does it

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deceive us? <https://doi.org/10.1007/s10815-020-01751>). The data streams and the influencers driving the dissemination of poor quality information have materialized into a persistent storm of ambiguity fueling the rise of malcontent and disbelief broadly in society.

The imperative at hand across the life spectrum is much more than a matter of dealing with loss on the scales witnessed in the past. As practices resume patient care around the world, the importance of pre-conceptional well-being for both men and women must now take center stage given the additional sources of duress and behavioral change necessitated by the crises we now find ourselves deeply embedded in. That

reproductive health is being influenced by this changing world cannot be overlooked against a well-established link between certain forms of pregnancy loss and the multiple stressors of our times (4).

Upcoming issues of JARG will build upon these issues, and as always we wish our readership good health and welcome your input at any time.

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