

**EconoFact Chats: Weathering – How Ongoing Stress Harms Black and Poor Americans**  
**Arline Geronimus, University of Michigan**  
**Published on 28 May 2023**

**Michael Klein**

I'm Michael Klein, executive editor of EconoFact, a non-partisan, web-based publication of the Fletcher School at Tufts University. At EconoFact, we bring key facts and incisive analysis to the national debate on economic and social policies, publishing work from leading economists across the country. You can learn more about us and see our work at [www.econofact.org](http://www.econofact.org).

**Michael Klein**

We all know that stress is bad for us. During times of stress, we don't sleep well, we may be more susceptible to being sick, and we just feel rundown. For most Americans, episodes of stress are, thankfully, relatively temporary. But for many people, especially members of the black community and those living in poverty, stress is an ongoing part of their lives, and this has dire consequences for their health and their well-being. Understanding these consequences has been the life work of my guest today, Arline Geronimus. Her new book, "Weathering: The Extraordinary Stress of Ordinary Life in an Unjust Society," presents her work and that of others, and also tells many compelling stories of people for whom 'weathering,' a term Arline coined, has deeply affected their lives and even brought about untimely deaths. Arline, welcome to EconoFact Chats.

**Arline Geronimus**

Thank you.

**Michael Klein**

Arline, I very much enjoyed Weathering, and I learned a lot. The book also resolves some puzzles I was wondering about, as I'll mention later. I thought you did a great job of including both, results from statistical analyses, and compelling narratives about individuals. For those who've not yet read your book, can you briefly describe what you mean by weathering?

**Arline Geronimus**

Sure. Weathering is a chronic stress-related biological process that leaves marginalized or exploited Americans vulnerable to dying or suffering infectious and chronic diseases and disabilities, long before they are chronologically old. The accidents of birth that assign each of us to either a socially valued or a marginalized group can impact life expectancy, not just through the obvious economic determinants or inequitable physical environmental exposures, but also through the slow drip of stealth ideas about race and personal responsibility that we share as a society. Weathering afflicts human bodies all the way down to the cellular level, as they grow, develop, and age in a racist, classist, xenophobic, or otherwise unjust society.

**Michael Klein**

How did you come up with the term "weathering" itself?

### **Arline Geronimus**

I chose the name weathering because the word is a contronym, that is, a word with opposite meanings. Weathering can describe deterioration and erosion as in, the rock has been weathered by millions of years of rain, but also it can signal strength, resourcefulness, endurance, even grit, as in the family weathered the recession very well. With regard to health and aging, I see it as signifying both those meanings because against all odds in defiance of all the stereotypes and allegations about their sinister motivations, or deficient capabilities, or dysfunctional family life and in the absence of a reliable or adequate government safety net or family support policies, members of marginalized groups engage in persistent, active, effortful coping as individuals and also through pooling risk to weather the storms created by the society they live in. These tenacious efforts can take a health toll themselves. That is to say through weathering, members of marginalized communities age prematurely no matter how well they follow the social contract, the American creed, or the latest dispatches from the front lines of healthy behavior science, sometimes because they do in the face of structural barriers, even barricades, and toxic conditions.

### **Michael Klein**

So, what are some of the health consequences of this weathering, of this constant chronic stress?

### **Arline Geronimus**

The inner workings of our bodies are always active and adapting, physiologically responding as necessary to any changes, challenges, or threats in our environment, whether they be extreme heat or cold when you shiver or sweat, or whether they be at the other extreme; an acute threat to life or limb. So human bodies have evolved to react to potential or concrete life-threatening stressors in our environment. So people know this is as 'fight or flight,' you see the tiger heading your way, your body immediately activates a release of hormones that increase your heart rate, blood pressure, and breathing rate to propel oxygenated blood to your large muscles quickly, increasing your capacity to fight or flee. Meanwhile, body systems that are not important to your immediate survival are deprived of well-oxygenated blood and nutrients for the short duration of the threat. In effect, some organs and body systems get overused and overtaxed while some are neglected, again for just the duration of the threat. Once the threat is over, you've successfully escaped the tiger, for example, in a matter of a few minutes, your body systems return to their usual functions. The stress hormones recede, the sugar and fat and white blood cells, they catapulted into your bloodstream for energy and to prepare for wound recovery return to their storage sites. The body quickly returns to its pre-arousal stress hormone levels. But key to weathering, the threat that activates these physiological processes does not have to take the form of a raging beast. Physiological stress processes are set in motion when any kind of threat is anticipated or experienced, whether it is objective, probabilistic, or psychosocial. Key to survival in a threatening environment is to be vigilant to cues that might alert you to a possible threat, which automatically activates this stress process when you worry or anticipate or see harm, even when it turns out to be a false alarm.

**Michael Klein**

So, in contemporary America, what's an example of that?

**Arline Geronimus**

An example of that would be you're driving, minding your own business, driving and you're Black, and you get pulled over for the police and you don't know why, or maybe you realize you forgot to put on your blinker, some very minor thing. But you will immediately go into that kind of physiological stress arousal because even though the chances are small and this is likely to be a false alarm, there's enough reason to know that there is a real possibility you will end up dead in this interaction if you behave in the wrong way. And so that would be a very clear-cut example. Other examples are a little more nuanced. You walk into a classroom and you're the only girl in a math class with all men, and you immediately go on alert. Are people going to consider you less intelligent, less capable of math? That can set this arousal off too.

**Michael Klein**

And in fact, that's a situation that you faced as you describe in your book. You were the only girl, you were the best student, but you were the only girl and you were continually downgraded by your teachers who had a sexist view of women's ability or girls' ability to do math.

**Arline Geronimus**

Absolutely.

**Michael Klein**

So, the accumulation of evidence, Arline, by you and others and advances in our understanding of physiology have vindicated work, and your work is now widely accepted as reflected in your selection to be a member of the National Academy of Medicine, of the National Academy of Science. But these ideas were not initially well received, right?

**Arline Geronimus**

Not by the public, which also affected my life at work as well. You might say I was "canceled" before "canceled" became a thing. My earliest research looked at black, white inequities in maternal and infant health, something that many people are concerned about today, but very few people were studying back 30 years ago when I first started to study it. And among other findings, my research showed that in contrast to conventional wisdom for, black women in the US, the healthiest pregnancies occurred in the late teens with rates of infant mortality and other poor outcomes increasing steeply between the late teens and the mid-thirties. For a variety of reasons, prominently including the political context of the early 1990s, that truly factual and descriptive finding was considered socially unacceptable. And so although the work survived the standards of scientific peer review, publicly it was distorted in the media to suggest I was implying that teenage motherhood should be promoted among Black women. This was never the implication. I interpreted my findings to suggest for policy, but the public ignored the unconscionably higher and growing risks of infant health and death black women faced as they postponed childbearing through their twenties and thirties. For me, I thought it was critical to understand what about life as a black woman in the US made it increasingly unsafe to bear your child as you age through your twenties and thirties.

**Michael Klein**

So as I mentioned in the introduction, your book resolves some of the questions I had and in particular, I interviewed Maya Rosen Slater and Petra Persson of Stanford a few weeks ago about their work on maternal mortality in a recent EconoFact Chats episode. In that podcast, we discussed rising maternal mortality in the United States while maternal mortality is falling in other countries. And we also discussed the wide differences in American maternal mortality rates between Black and White women. For example, one striking result from their work is that maternal mortality rates of the richest quintile of black women, that is the richest fifth of Black women in the United States, is the same order of magnitude of the poorest quintile, the poorest fifth, of white women. So, this black and White differential is not reflecting income rather, as one commentator put it, it is because of racism, not race. So that was a little puzzling to me. But then when I read your book, it made sense because of the weathering that black women have suffered throughout their lives. And it's and it's a cumulative effect as well.

**Arline Geronimus**

Right. I didn't get the chance to clarify that if you have chronic stress arousal of the kind I described over time and cumulatively, that wears down your blood vessels that enlarges your heart, that leads to hypertension, plaque buildup. And so you can see how that relates to hypertension, diabetes, and other things that affect your birth outcomes. In addition, when you go through that arousal, your fetus, if you're pregnant, is treated like a drag on your system. And if you're trying to escape the tiger, so to speak. And so nutrients are not an oxygenated blood is not, you know, given enough measure to the fetus during the time of this arousal. And the problem is if you're black in America, or a member of many other marginalized groups, your stress arousal is chronic, so you're constantly overusing some of your body systems and organs, and neglecting others, including if you're pregnant, a fetus. So, what I was not surprised at all by their findings, but I understand most people would have been but given, you know, what I've studied and know, I think what it tells us is we have to stop reducing black-white inequities, in this case, in birth outcomes and maternal mortality, to issues of material resources. We've tended to have an idea that they were very important, and they are important, and medical care is important, but in the face of weathering, there are other causes of maternal mortality that flow directly. And whether you're wealthy or not wealthy, or impoverished, or working class, if you're black or in a denigrated group.

**Michael Klein**

Yeah, Petra and Maya were able to do that because they had data not only on women's race, but also their income, and that's how they come up with that result. Another puzzle that came up in my discussion with Petra and Maya, and which again is resolved by your work, has to do with teen pregnancy. The rate of teen pregnancy has been declining, and I thought in my conversation with Petra and Maya that this would lead to a lower, not a higher rate of maternal mortality, but your book helped me understand why rising maternal mortality in very low birth weight first births were higher for black women as they age, and that this is in stark contrast to what white women experience.

### **Arline Geronimus**

Yes, in the 30 years where U.S. teen pregnancy rates have dramatically been reduced from about, for example, 45% of first births to black women in the U.S. down to about 17%, and for whites, from about 15% to 8%, maternal mortality and very low birth weight rates have gone up, not down. This is counterintuitive to most people, but it's very easily explained, unfortunately. This is both because black or impoverished moms in their late teens are the least weathered they will ever be in their reproductive lives, and because in the U.S. context, higher education and incomes are inextricably tied to older maternal ages at birth. Given our mores and how we've structured our institutions and work weeks, the more a woman earns or is highly educated, the likelier she is to wait to become a mother, whether because of societal norms or the structures and requirements of her job or school or other professional institutions, and the more likely she is to be weathered or even severely weathered when she becomes pregnant if she comes from a marginalized group. So if we just take the vague politicized and misleading concept of teen motherhood out of the discussion, the current composition of black mothers includes fewer births in the late teens and early 20s when the health impacts of weathering are less, and more births now in the late 20s and 30s, when weathering has been advanced. Seen that way, it's really no surprise that the very low birth weight and maternal mortality have increased and the black white inequity in these outcomes remains entrenched as teens have, teen births have been reduced.

### **Michael Klein**

Yeah, it makes perfect sense if you think about it as sort of an economic optimization problem, which unfortunately I think about a lot of things that way. And you have these quotes in the book where young women are recognizing the risks that they face if they wait, they choose to have babies earlier on. So, it makes perfect sense given the knowledge of what they might not call weathering, but what they observe to be the same thing as weathering, why they choose to have births at earlier ages. You also make the point that when people are talking about teen births, it gives the impression of 13-year-olds, 14-year-olds, 15-year-olds having children. But in fact, it's mostly 18 or 19-year-olds by a very vast majority.

### **Arline Geronimus**

I think that's really important to emphasize. The image we were really sold in the 80s and 90s of teen moms was this idea of babies having babies, when in fact, 75% of teenage mothers are 18 or 19 years old, and somewhere less than 2% are those 13, 14, 15-year-olds. If you think about being age 18 or 19, those are ages when a woman can vote, she can sign legal contracts, she can go to war. It's the ages that mothers have been through most of human history. And so, we also thought that, well, but 18 and 19-year-olds should be in college and maybe having a baby will prevent a woman from being able to fulfill her potential. But what we missed there was how few people get to go to college and how selective, I don't mean selective colleges, but it's a group of people who have had good quality public education through high school, who have access to colleges. So that in fact, there's actually much research that shows that the people who become teen mothers at 18 or 19 probably were never headed for college in the first place.

### **Michael Klein**

So, it is like a rational choice. Another misconception that's linked to what you were discussing, that people who have privilege might think about people with less privilege in a very similar way, but that's misleading, has to do with what you call kin networks, that black folks and rural

poor whites often view family as a multi-generational network who may or may not even be biologically related, but they feel part of a common family nevertheless. How do kin networks affect weathering?

### **Arline Geronimus**

Denigrated, discriminated against, and impoverished groups often invest in these multi-generational networks of caring and responsible people, that encompass both extended family and friends, who do everything they can to pool risk and support one another, sort of like today I'll take you in because you were evicted, tomorrow you'll come watch my child so I can get to work. Networks help the marginalized, working class, and impoverished cope through many routes in addition to these sorts of more practical economic routes. These include providing social support, providing affirmation, and providing information on how to negotiate the broader social world that marginalizes them. So, when you hear about, if we go back to our example about a young black man being stopped by the police, we've heard about 'the talk' that he's been given, 'the talk' by his parents, that's a key part of racial socialization. They understand in a way that the rest of us might not, that he actually may be in danger and that he has to respond in certain ways to the policeman. And he's been coached through his kin networks, in that it's not just parents, but this whole network of multi-generational people who can tell them how you negotiate life in the U.S. as a black person, and avoid the worst threats to your life. In addition, networks are critical to maintaining some kind of stability and security and providing a form of social insurance against orphanhood, widowhood, and prolonged disability within the family, which themselves occur with great frequency in families in these populations because of weathering. So, it all sort of fits together as a calibrated whole, and it would be very hard for just the nuclear family to economically support people in poverty, to also step in to raise their children if they're too sick or disabled, or have died early, also can turn to them to help take care of them as they age. So it's a very interesting and complex system, but I do want to be clear that I'm not trying to romanticize it in any way, that acknowledging the survival value of such strategy doesn't mean that we should minimize the profound and awful painful trade-offs and sacrifices that have to be made in the absence of a racially tolerant society or a reliable social safety net, secure employment or a living wage, or the heroic effort and resulting exhaustion that maintaining these networks requires, and therefore also contributes to weathering. These networks are both shelter and storm in a context of a racist society that leads to weathering.

### **Michael Klein**

In fact, in the book, you look back one generation in your own family and find a similar kind of kin network that allowed your mother to achieve a higher education, and her siblings sacrificed for that. So, this is something that is not new, but is especially pronounced in currently underserved communities, and for the black community, it's obviously been present forever. Arline, this podcast is focused on economic and social policy issues, but your path-breaking work is on physiological and health implications of weathering. How can those insights help inform policies, and what would you say are the most important lessons from your public health research for developing better, more effective, and more humane programs?

**Arline Geronimus**

Weathering is fundamental to everything, including economic issues, whether it's because of how it contributes to rising health care costs that are crippling the nation and individual families, whether it's because of work disability that undermines productivity, or even the ability to work at all, or whether it's early death, which also undermines having a good working age population. We think of people in their working ages as healthy, but in these populations, they are not, and they're increasingly less and less healthy. So, we should all be concerned with weathering, even if our focus is economic. In general, the weathering has implications for all kinds of social and health policies, especially if you want to actually disrupt, reduce, or eliminate weathering itself, which you would need to do to solve some of these problems I've just mentioned, like crippling health care costs, and not having healthy workers. But it also speaks to the best practices for urban revitalization efforts, for promoting educational equity, for safeguarding voting rights, for designing family policies, even to approaches to climate change. And I talk about all this in the book. Our failure to recognize weathering has impeded our policy progress in all of these spheres.

**Michael Klein**

Well, as I mentioned at the outset, I really found this to be a tremendously interesting and powerful book, and I recommend it to all of our listeners. I'm appreciative of you coming on the podcast today so we can at least have a bit of an insight into your life's work and the wonderful book. And I thank you very much for joining me, Arline. I also thank you for this important research that you've done to really advance our knowledge of these really important issues.

**Arline Geronimus**

Thank you very much, Michael.

**Michael Klein**

This has been EconoFact Chats. To learn more about EconoFact and to see the work on our site, you can log into [www.econofact.org](http://www.econofact.org). EconoFact is a publication of the Fletcher School at Tufts University. Thanks for listening.