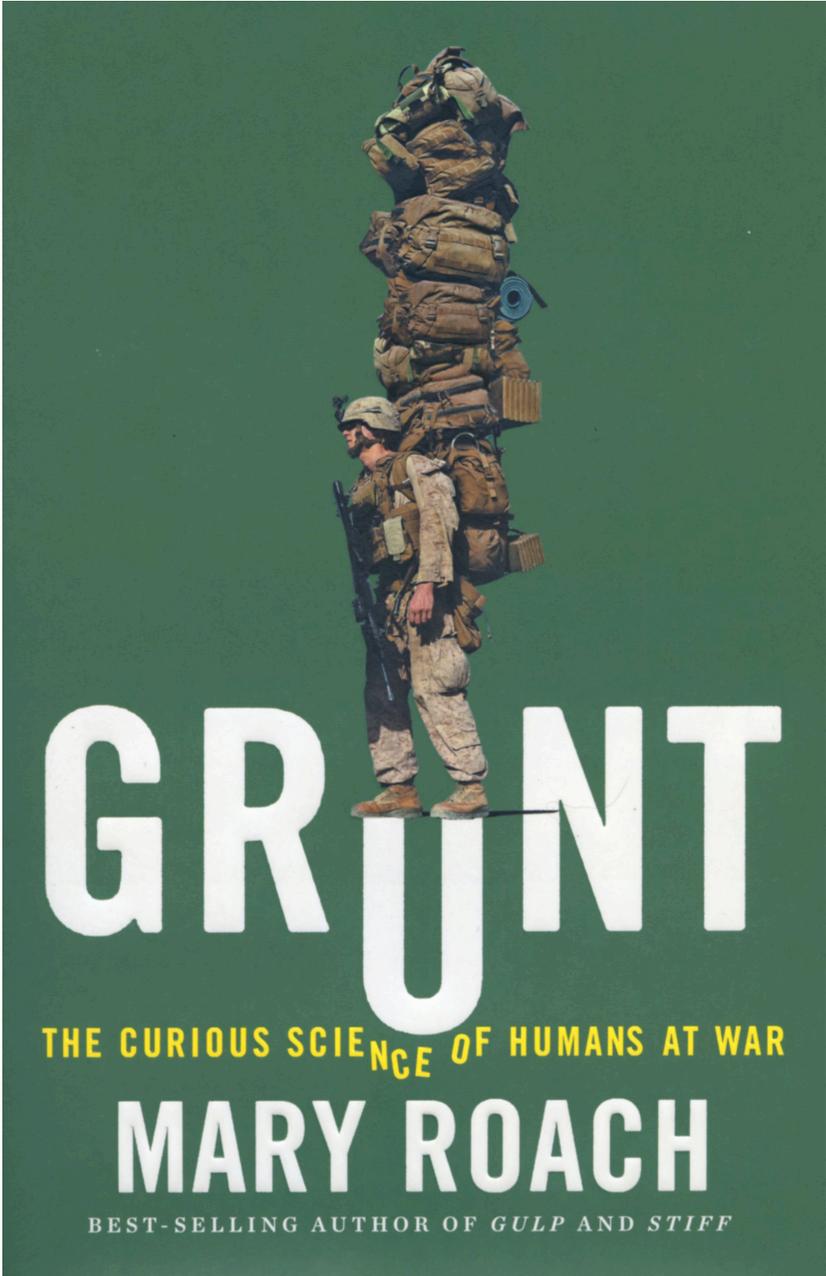


DONALD ANDERSON

“Take a Message to Rumsfeld”

Before Hiroshima and Nagasaki, the powers that were applied what they designated the “Saipan ratio” to the inevitable land invasion of Japan. This ratio, based on the Battle of Saipan, was 9.5:1 in favor of the US. Percentage advantage aside, US commanders ordered a half million Purple Hearts, that, as we now gratefully know, went unused. For years, I thought of these figures as “military preparation.” This jaded outlook held sway until I heard Donald Rumsfeld defending unarmored Humvees by announcing “You go to war with the army you have.” Though such an utterance is a chilling truth, it qualifies as insensitive as the answer to the soldier who was asking why his unit had to rummage through trash heaps for scrap metal to weld onto old Humvees. Rumsfeld would go on to “clarify” at a later press conference that *There are things we know that we know. There are known unknowns. That is to say there are things that we now know we don't know. But there are also unknown unknowns. There are things we do not know we don't know.* Not much here to engender confidence. I also find myself falling back on something I learned firsthand during 22 years of active duty service: *Nothing is ever impossible for people who don't have to make it come true.* All to explain the pleasure and relief I felt as I read page after page of Mary Roach's foray into what government scientists contribute to the newfound “knowns” of a combat soldier's well-being. “*Grunt*,” to quote the publisher, “tackles the science behind some of the soldier's most challenging adversaries—panic, exhaustion, heat, noise—and introduces us to the scientists who seek to conquer them.”

An old hand at deft inquiry, Roach is the author of, among others, *Gulp: Adventures on the Alimentary Canal*; *Packing for Mars: The Curious Science of*



Life in the Void; and *Stiff: The Curious Lives of Human Cadavers*. Cadavers, as it turns out—in Roach’s most recent book—situated in seats (duct-taped in place) with sensors mounted on their bones and on wires laid along their limbs and spines, are perfect sources of blast data. These scientists are concerned about what happens to soldiers even in up-armored Humvees. Before one such test, The Secretary of the Army shut it down because of sudden public complaints and violation of “personal beliefs.” Because of both the waste of already spent money for the project and the potential waste of the donors’ bodies, the test was cleared. One of the principal scientists suggested that the project scrutiny had had a silver lining in that it allowed the investigators to inform military leadership about the risks they were subjecting soldiers to. “In other words,” a chief investigator opined, “maybe they’ll worry a little less about the dead and a little more about the living.”

The scientists in Roach’s report seem all cut from similar cloth. Instead of going to war with the army you have, these government scientists understand impossible dilemmas and try to solve them. For example, Roach points out that unprotected human ears can spend eight hours a day exposed to the noise of a freeway or crowded restaurant (85 decibels) without incurring hearing loss. Increase that noise to 115 decibels (chainsaw, mosh pit) and your safe exposure is halved. “The 187-decibel boom of an AT4 anti-tank weapon lasts a second, but even that ultra-brief exposure would, to an unprotected ear, mean a permanent downtick in hearing.” The problem with ear protection of course is that during heavy combat being able to hear your comrades and leaders may be the difference between life and death. Roach points to those who serve in Special Operations. Because these soldiers don’t want to be prevented from doing what they both love and think of as their duty, they seldom, if ever, report hearing loss, going so far, even, to cheat on hearing tests. As Roach points out, “When things go kinetic, there’s a greater than 50 percent chance that a member of the team will be injured or killed. Hearing loss isn’t something you spend time worrying about. It’s a given.” One soldier, she reports, an artilleryman, said he *wanted* hearing loss, because everyone in his unit had hearing loss. “If you didn’t have a hearing loss,” he said, “that meant you hadn’t done anything.” One of the reasons the government wants scientific help with ear protection, though, is that the Veterans Administration spends \$1 billion a year on hearing loss and tinnitus. That a Special Operations soldier might fire a hundred thousand rounds in ten years of service is part of that end-game expense. The crack of an M16 creates 160 decibels. In Roach’s consideration of martial noise, she writes of a soldier who lost an arm and a leg and ruptured both eardrums in a blast. His

greatest loss, he told Roach, was the inability to communicate with his wife and kids, not the fact of his missing limbs.

Such details are the hallmark of Roach's approach. I mean, a lesser writer may have dodged a chapter on "diarrhea as a threat to national security." Fact: during the American Civil War, 95,000 died from diarrhea. In Vietnam, Roach reports, four times as many soldiers were admitted to hospitals for diarrhea than for malaria. It is estimated that at least one-third of combatants in Iraq suffered from bad food and water and filthy conditions, resulting in diarrhea and its complications. This was especially true of Special Operations who most often are more dependent on local resources than combatants in the main forces. The Department of Defense reports a five-fold higher risk of Irritable Bowel Syndrome among men and women who suffered acute diarrheal infection while deployed in the Middle East. By some estimates, the Defense Department could end up spending as much for the long-term consequences of food poisoning and diarrheal infections as for PTSD. Roach's investigations are thorough. Resort to *Grunt* to better understand the necessity of sweating to soldiers in the field, why hydration is as vital as proper weapon maintenance. Or why maggots are most effective in debridement therapy for soil-infected IED wounds. Or why sleep deprivation (a form of torture) is a constant for submariners. Did you know that government scientists have spent money and time on developing malodorants (bad smells) to keep or get people away from targeted real estate? No joke here. Roach found proof of such experiments in released classified documents. One such request resulted in a project entitled "Who Me?" As it turns out, manufactured tubes of Who Me? were never shipped to the field. A little more than two weeks before the final report on Who Me? was released, Hiroshima was awakened by a different sort of bomb. Such a cabinet of wonders, Roach's *Grunt*. Without Roach's inquiries, you are not likely to be aware of the serious and necessary work of genital reconstruction for soldiers harmed by blast wounds. According to Roach's interviews, blast victims first concern is with who else has been hit, and how they are, immediately followed by the question *Is my junk okay?* The surgeons and medical folk who work in this area of war damage seem particularly sensitive and caring, and the two chapters that Roach devotes to the issue are among the most poignant in the book. That holds true for the chapter on the preparation for the effects of war on the medics who are the frontline frontiers of carnage.

If it is true that Roach is often hilarious (she is!), it is also true that there are reviewers of *Grunt* who want to scold Roach for her often irreverent takes on gritty, even grim, facts and issues. I am not one of those reviewers. It may be because I

was raised on M*A*S*H in which the field surgeons managed their gruesome work with humor and homemade liquor. Mary Roach is the Hawkeye of science writers, honoring men and women laboring diligently to protect the soldiers who fight in our name. *Grunt* is an essential read. It strikes me as a “known unknown” Donald Rumsfeld could fit into his light rucksack.

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