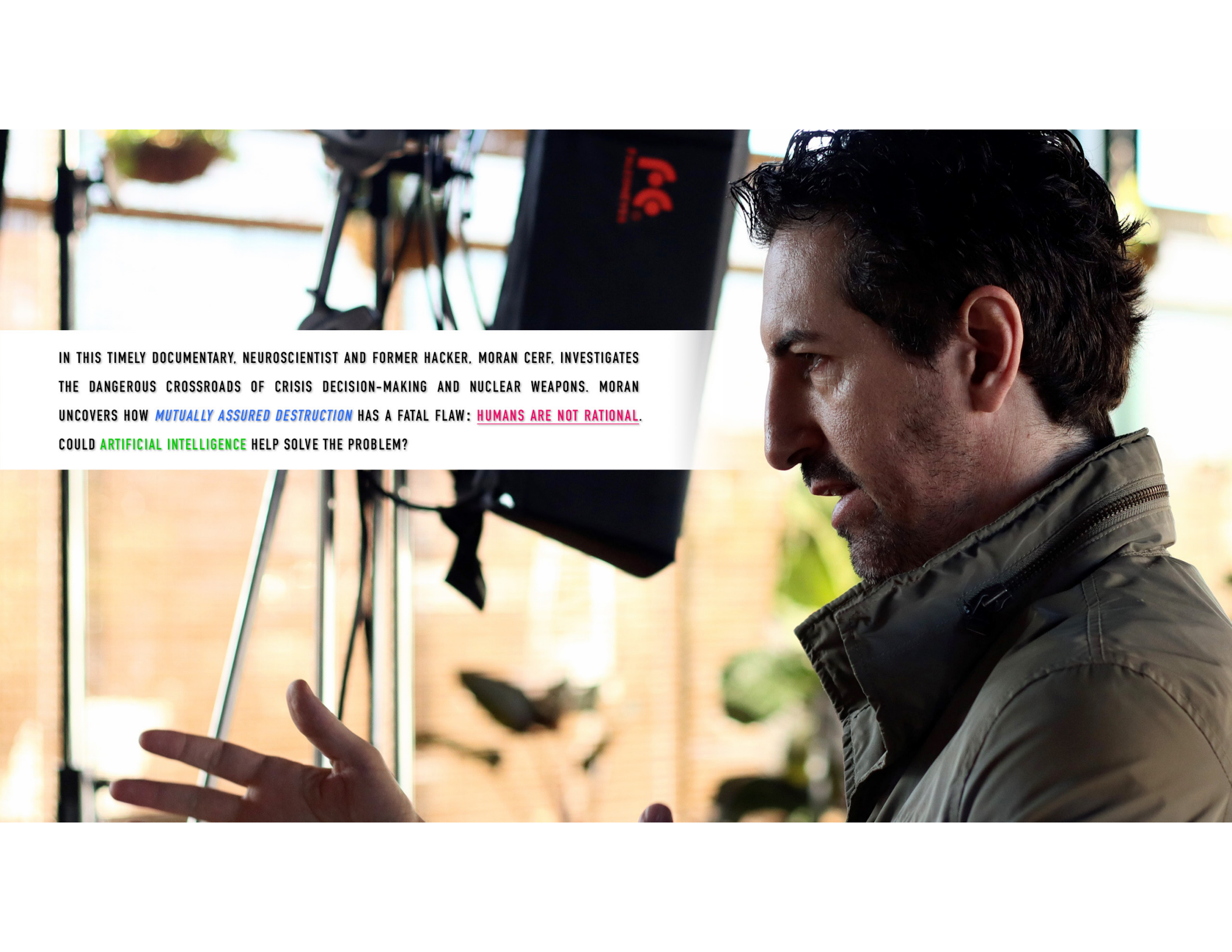




**MUTUALLY ASSURED DESTRUCTION**

SERIAL NO. 98-31772-58


A man with dark hair and a beard, wearing a grey jacket, is shown in profile from the chest up. He is looking towards the left of the frame with a thoughtful expression. His right hand is raised in the foreground, palm facing up, with fingers slightly spread. The background is a blurred indoor setting with a window and some equipment. A white text box is overlaid on the left side of the image.

IN THIS TIMELY DOCUMENTARY, NEUROSCIENTIST AND FORMER HACKER, MORAN CERF, INVESTIGATES THE DANGEROUS CROSSROADS OF CRISIS DECISION-MAKING AND NUCLEAR WEAPONS. MORAN UNCOVERS HOW *MUTUALLY ASSURED DESTRUCTION* HAS A FATAL FLAW: HUMANS ARE NOT RATIONAL. COULD *ARTIFICIAL INTELLIGENCE* HELP SOLVE THE PROBLEM?



IT'S CALLED A "BOLT OUT OF THE BLUE," A NUCLEAR ATTACK WITHOUT WARNING, THE ULTIMATE NIGHTMARE OF EVERY WORLD LEADER: MINUTES TO RESPOND, MILLIONS OF LIVES AT STAKE, AND AMBIGUOUS INFORMATION DRIVING ONE CRITICAL CHOICE MADE BY AN IRRATIONAL HUMAN BRAIN THAT COULD END THE WORLD.





FOR ALMOST A CENTURY, GLOBAL PEACE AND SECURITY HAS BEEN MAINTAINED BY **DETERRENCE THEORY**: IF ONE COUNTRY ATTACKS WITH NUCLEAR WEAPONS, THEN ITS ENEMIES WILL RESPOND IN KIND, AND THE RESULT WILL BE MUTUALLY ASSURED DESTRUCTION.

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BUT THE POWERFUL LEADERS MAKING THESE DECISIONS MUST BE RATIONAL. AND WHAT IF THEY ARE NOT? WHAT IF THEY'RE TIRED? OR STRESSED? OR UNDER PRESSURE FROM OUTSIDE INFLUENCES?



ADDITIONALLY, THE TECHNOLOGY TO MAKE FULLY INFORMED DECISIONS NEEDS TO FUNCTION PROPERLY. WHAT IF AN EARLY WARNING SYSTEM FAILS? WHAT IF HACKERS INFILTRATE AND MANIPULATE THESE SYSTEMS? OR WHAT IF THERE IS A NEW TECHNOLOGY?

**VLADIMIR PUTIN** HAS PUT RUSSIA'S NUCLEAR FORCES ON "HIGH ALERT."  
THIS STORY IS A CALL TO ACTION QUESTIONING OUR GLOBAL SECURITY  
AND SEEKING NEW SOLUTIONS TO A COMPLEX PROBLEM.





**JIM BOENSCH / "MISSILEER" / U.S. AIR FORCE**



**JOAN ROHLFING / PRESIDENT / NUCLEAR THREAT INITIATIVE**



**MICHAEL ROGERS / FMR. DIRECTOR / NSA & CYBER COMMAND**

NOW, WITH THE SUPPORT OF CARNEGIE, MORAN CERF HAS INTERVIEWED THE WORLD'S LEADING EXPERTS ON **NUCLEAR WEAPONS** AND **ARTIFICIAL INTELLIGENCE**, INCLUDING POLITICIANS, ACADEMICS, ACTIVISTS, AND THOSE AT THE FOREFRONT OF DECISION-MAKING IN THE U.S., RUSSIA, CHINA, ISRAEL, U.K., FRANCE, PAKISTAN, INDIA, AND NORTH KOREA.



**DAN ARIELY / PROFESSOR, BEHAVIORAL ECONOMICS / DUKE**



**RAO KAMBHAMPATI / PRESIDENT / ASSOC. FOR ADVANCEMENT OF A.I.**



**LEON PANETTA / FMR. SECRETARY OF DEFENSE**

## INTERNATIONAL NUCLEAR WEAPONS

JEFFREY LEWIS	Professor / Middlebury Institute	United States
PAVEL PODVIG	Research Fellow / United Nations Institute for Disarmament	Russia
TONG ZHAO	Senior Fellow / Nuclear Policy, Carnegie Endowment for Peace	China
BENOIT PELOPIDAS	Founder / Nuclear Knowledges — Stanford University	France
AVNER COHEN	Historian / Middlebury Institute	Israel
ISAAC BEN-ISRAEL	General / Israel Defense Forces — Member of Parliament	Israel
BRUCE BENNETT	Senior Analyst / Rand Corporation	North Korea
ROBERT FORSYTH	Nuclear Submarine Commander / British Royal Navy	United Kingdom
JOHN GOWER	Admiral / British Royal Navy	United Kingdom
OLAMIDE SAMUEL	Professor / SOAS University of London	Africa
SYLVIA MISHRA	Nuclear Researcher / King's College London	India – Pakistan

## ARTIFICIAL INTELLIGENCE

DAVID FERRUCCI	Founder / IBM Watson	Machine Decisions
DOUG LENAT	Founder / CYC – Stanford University	Symbolic AI
PETER HANCOCK	Professor of Engineering / University of Central Florida	Cognitive Design, Man-Machine Teams
ZACH KALLENBORN	Policy Fellow / Schar School of Policy & Government	WMDs, Drone Swarms, AI terrorism
GRAHAM TAYLOR	Professor of Engineering's / Vector Institute	Machine Learning, Explainable AI
MICHAEL HOROWITZ	Director / Perry World House, University of Pennsylvania	AI Military Innovation
YAJIN CHOI	Senior Researcher / Allen Institute for AI	Commonsense AI, Project Mosaic
IYAD RAHWAN	Director / Max Planck Institute for Human Development	Machine and AI Ethics
RAO KAMBHAMPATI	President / Association for the Advancement of AI (AAAI)	Human-Aware AI
ASHLEY LLORENS	Vice President / Microsoft Research	Autonomous machine war

## FEATURING

DANIEL KAHNEMAN (NOBEL LAUREATE, ECONOMICS AND PSYCHOLOGY)  
ESTHER PEREL (RELATIONSHIP THERAPIST)  
TIM URBAN (WRITER, WAIT BUT WHY)  
LAURIE SEGALL (JOURNALIST AND FORMER CNN TECHNOLOGY EDITOR-AT-LARGE)  
RAHZEL BROWN (BEATBOXER)  
NOURIEL ROUBINI (PROFESSOR OF ECONOMICS, NEW YORK UNIVERSITY)  
ERIC SCHURENBERG (FORMER EDITOR-IN-CHIEF, INC. AND FAST COMPANY)  
ROY RAMON (FORMER ISRAELI SUBMARINE COMMANDER)  
MICHAEL PLATT (PROFESSOR OF NEUROSCIENCE AND DECISION-MAKING, WHARTON)  
NORMAN PALMER (FORMER DIRECTOR AT THE DEPARTMENT OF HOMELAND SECURITY)  
PAUL COSTA (HEAD OF ENGINEERING, APPLE)  
PATTY MILLS (BROOKLYN NETS BASKETBALL PLAYER)  
ERIKA LAWLER (OLYMPIAN MEDALIST)

ROB WOLCOTT (PROFESSOR OF ENTREPRENEURSHIP, UNIVERSITY OF CHICAGO)  
BARBARA TVERSKY (PROFESSOR OF SOCIOLOGY, STANFORD UNIVERSITY)  
GUY HOFFMAN (PROFESSOR OF ROBOTICS, CORNELL UNIVERSITY)  
JOSHUA ELLIOTT (DARPA)  
DIANA TAMIR (PROFESSOR OF PSYCHOLOGY, PRINCETON UNIVERSITY)  
JULIA LANE (PROFESSOR OF PUBLIC SERVICE, NEW YORK UNIVERSITY)  
SETH GOLDSTEIN (PROFESSOR OF COMPUTER SCIENCE, CMU)  
ANDY WALSHIE (HUMAN PERFORMANCE EXPERT)  
ALICA COHN (EXECUTIVE COACH)  
Yael HANEIN (PROFESSOR OF ELECTRICAL ENGINEERING, TEL-AVIV UNIVERSITY)  
ELAY DE BEER (GAMING EXPERT)  
JB MILLER (HOLLYWOOD EXECUTIVE)  
SUSANNA POLLACK (PRESIDENT OF "GAMES FOR CHANGE")  
KYLE DROPP (FOUNDER OF "MORNING CONSULT" POLLING COMPANY)

## GOVERNMENT / MILITARY

MICHAEL ROGERS	Director / NSA — Admira / U.S. Navy	U.S. Nuclear Strategy, Decision-Making
LEON PANETTA	Secretary of Defense — Director, CIA — Chief of Staff / Obama	U.S. Nuclear Strategy, Decision-Making
JIM BOENSCH	U.S. Nuclear Missile Launcher	Minutemen "Missileer"
ED KAPLAN	Dean / U.S. Army War College	U.S. Nuclear History & Strategy
JURGEN HEITMANN	U.S. Navy Seal	Group Decision-Making, Leadership
ANAGHA IYENGAR	Program Manager / U.S. National Nuclear Security Administration	Atomic Energy Safeguards
JOHN G. FERRARI	Major General, U.S. Army — American Enterprise Foundation	Cyber-security, U.S. Nuclear Strategy
BOBBY RAY INMAN	Director / CIA — Director / NSA — Admiral / U.S. Navy	U.S. Nuclear Strategy, Decision-Making
ROBERT GREEN	Nuclear Bombardier-Navigator / British Royal Navy	Nuclear Combat
LEONOR TOMERO	Deputy Assistant Secretary of Defense / Nuclear & Missile Defense	U.S. Nuclear Planning and Budgeting
DOUGLAS SHAW	U.S. Department of Energy — U.S. Arms Control & Disarmament	Deterrence Theory
DEBORAH ROSENBLUM	Assistant Secretary of Defense for Nuclear & Biological Defense	U.S. Nuclear Strategy, Decision-Making

## SPECIALTY

SANDRA MATZ	Professor of Computational Social Scientist / Columbia University	Big Data and Psychology
JOAN ROHLFING	President / Nuclear Threat Initiative	Nuclear Weapons Security & Reduction
SHARON WEINER	Senior Fellow, International Peace & Security / Carnegie Corp.	Nuclear Weapons, Non-Proliferation
FRANK VON HIPPEL	Professor of Theoretical Physics / Princeton University	Nuclear Physics
JAMES ACTON	Co-Director / Nuclear Policy Program, Carnegie Endowment	Escalation Risks, Arms Control
DAN ARIELY	Professor of Psychology & Behavioral Economics / Duke University	High-Risk Decision-Making, Psychology
EMMA BELCHER	President / Project Plowshares	Nuclear Non-Proliferation, Reduction
ALEX WELLERSTEIN	Nuclear Weapons Historian / Stevens Institute of Technology	Nuclear Launch Protocol History
PAGE STOUTHLAND	Cyber Consultant / Nuclear Threat Initiative	Nuclear Weapons Cyber-security
LYNN EDEN	Senior Research Scholar Emeritus / Stanford University	International Security, Arms Control
PABLOS HOLMAN	Hacker — Inventor — Futurist	Unconventional Nuclear Futures
MIKE LIPPITZ	Strategic Tech Planning / Department of Defense	DoD procurement, Soviet deterrence
MARTIE HELLMAN	Professor of Cryptology / Stanford University — Turing award winner	Nuclear Decision-Making Protocols
RORY SUTHERLAND	Chairman / Ogilvy Marketing Agency	How to sell a policy change
PAUL SLOVIC	Professor of Psychology, University of Oregon	Risk and Ambiguity's influence on decisions

## PENDING CLEARANCE

ERNIE MONIZ	Secretary of Energy / Obama
HENRIK SKAUG SÆTRA	Professor of Computer Science and Ethics
GEOFF LINK	Founder of the DARPA Biological Office
HAROLD HERING	U.S. Nuclear Missile Launcher
SARA KUTCHSAHANI	Senior Policy Analyst at the Center for Arms Control





# MORAN CERF

PROFESSOR OF NEUROSCIENCE AND BUSINESS  
KELLOGG SCHOOL OF MANAGEMENT / NORTHWESTERN UNIVERSITY

ALFRED P. SLOAN PROFESSOR OF FILM  
AMERICAN FILM INSTITUTE

/// HACKER  
UNIT 8200 / ISRAELI INTELLIGENCE CORPS

DR. CERF EARNED A Ph.D. IN NEUROSCIENCE FROM CALTECH, AS WELL AS AN MA IN PHILOSOPHY AND A B.Sc. IN PHYSICS FROM TEL-AVIV UNIVERSITY. HE HOLDS MULTIPLE PATENTS AND HAS BEEN PUBLISHED IN OVER 60 ACADEMIC AND SCIENCE JOURNALS SUCH AS NATURE, WIRED, AND FORBES. FEATURED ON CNN, BBC, BLOOMBERG, NPR, MSNBC, TED, POPTech, AND GOOGLE ZEITGEIST, MORAN IS A NATURAL MASTER OF CEREMONIES. HE HAS ALSO CONSULTED ON MULTIPLE HOLLYWOOD FILMS AND TV SHOWS, INCLUDING INCEPTION, BULL, LIMITLESS, AND FALLING WATER.



ARE THESE WEAPONS SO POWERFUL THAT NO HUMANS SHOULD BE ALLOWED TO USE THEM?

OR AS 1983'S **WARGAMES** CONCLUDED...

"THE ONLY WINNING MOVE IS NOT TO PLAY."



**MUTUALLY ASSURED DESTRUCTION**

