Unintended Consequences of Design

Matt Archer
04.11.22

Are Unknown Consequences predictable?

Should Unknown Consequences be predictable?

Five Possible Causes of Unanticipated Consequences

Robert K. Merton 1936

1. **Ignorance**
   (It is impossible to anticipate everything, thereby leading to incomplete analysis)

2. **Error**
   (Incorrect analysis of the problem or following habits that worked in the past but may not apply to the current situation)

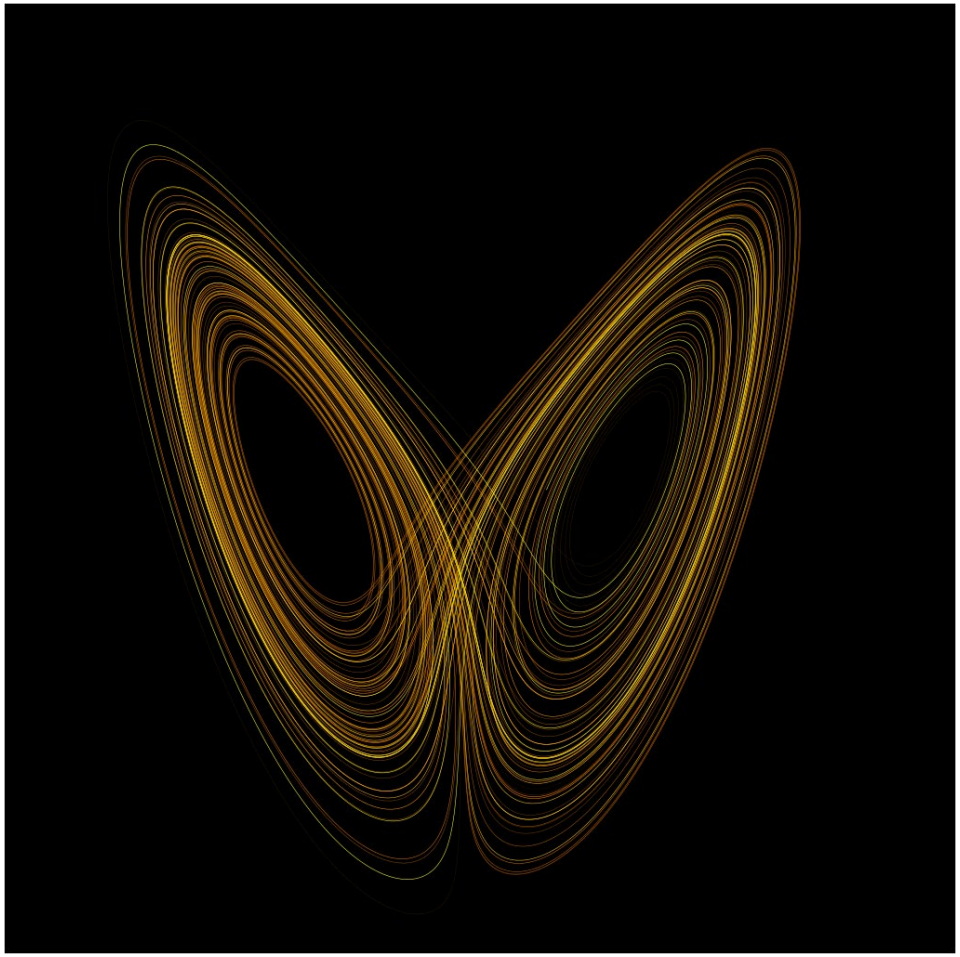
3. **Immediate interest**
   (which may override long-term interests)

4. **Basic values may require or prohibit certain actions even if the long-term result might be unfavourable**
   (these long-term consequences may eventually cause changes in basic values)

5. **Self-defeating prophecy**
   (Fear of some consequence drives people to find solutions before the problem occurs, thus the non-occurrence of the problem is not anticipated.)

Unanticipated
or
Unintended?

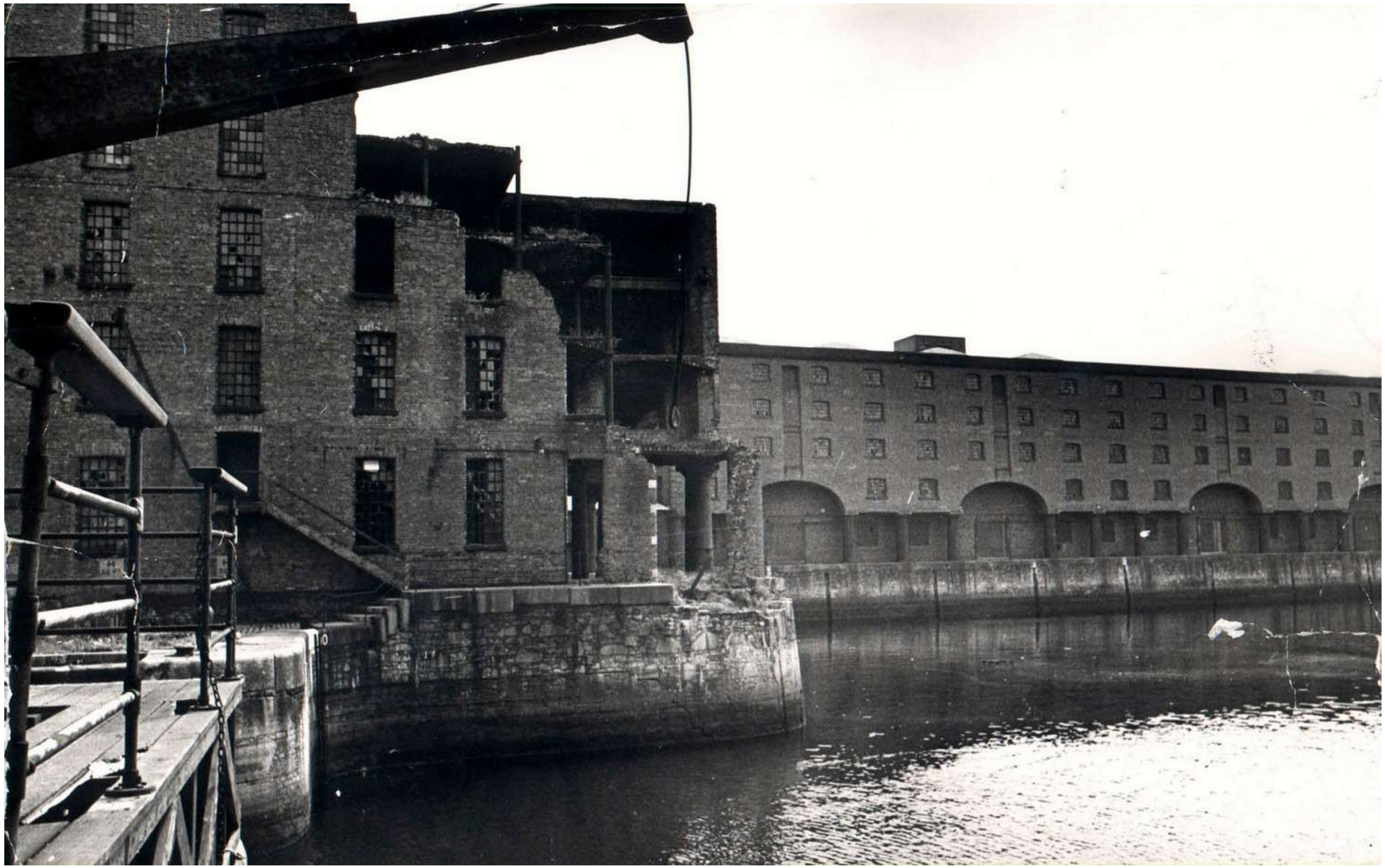
unanticipated consequences can only be unintended,
but unintended consequences can be either
anticipated or unanticipated,
a distinction lost in modern translation.



Butterfly Effect


















ALIANÇA

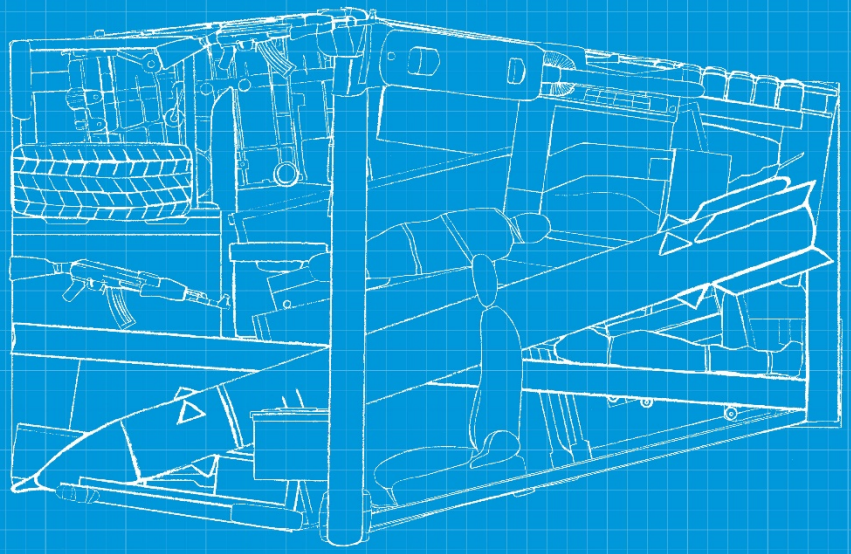






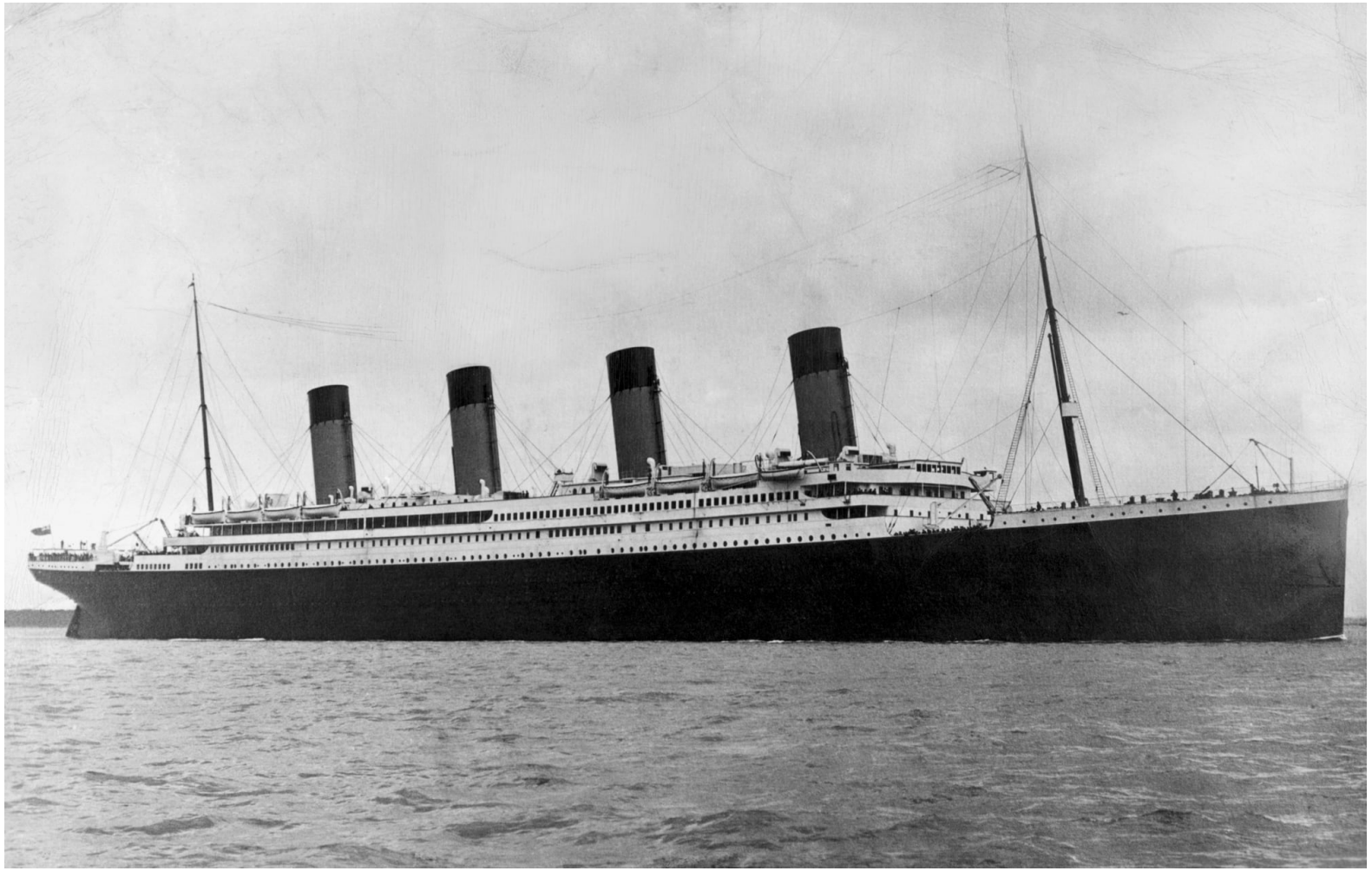


The Unintended Consequences of Design :
The Shipping Container

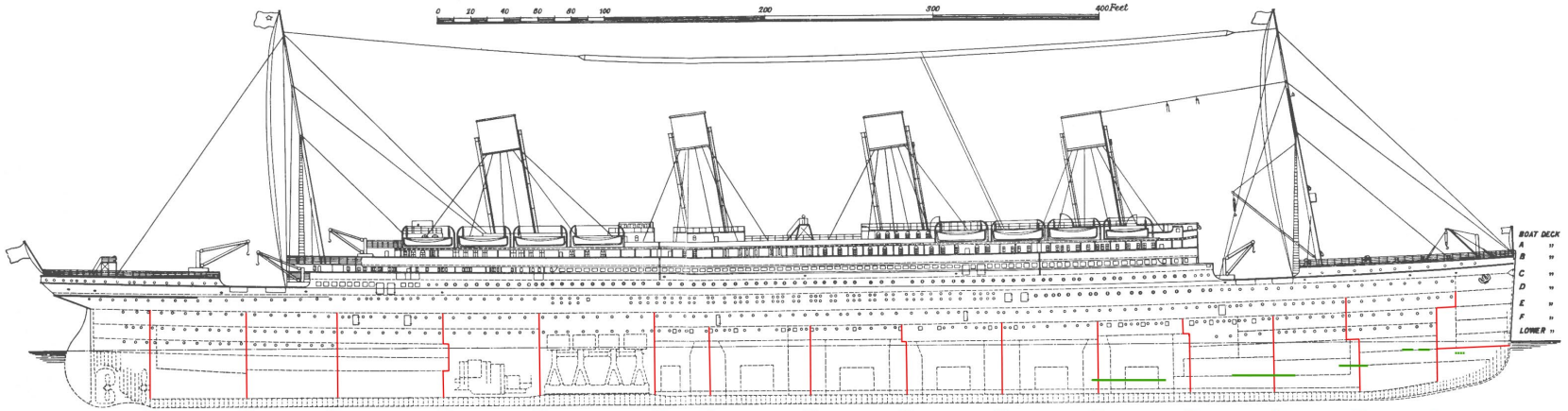


- AK47 x2
- Ammo box x1
- Ballistic Missile x1
- Bodies x2
- Bricks of Cocaine x3
- Car Seat x1
- Crate of lager x1
- Cardboard Boxes x4
- Chest Freezer x1
- Dishwasher x1
- Drug Packets x2
- Engine Block x1
- Fridge Freezer x1
- Gas Canister x1
- Hoover x1
- Palettes x2
- Pipe x1
- Plastic Explosive x1
- Printer/Scanner x1
- Grenade Satchel x1Sofa x1
- Steel Bar x2
- Flatscreen TV x1
- Tyre x1
- Wardrobe x1
- Wood Crate x1
- Wood Planks x2

Comfort over Safety

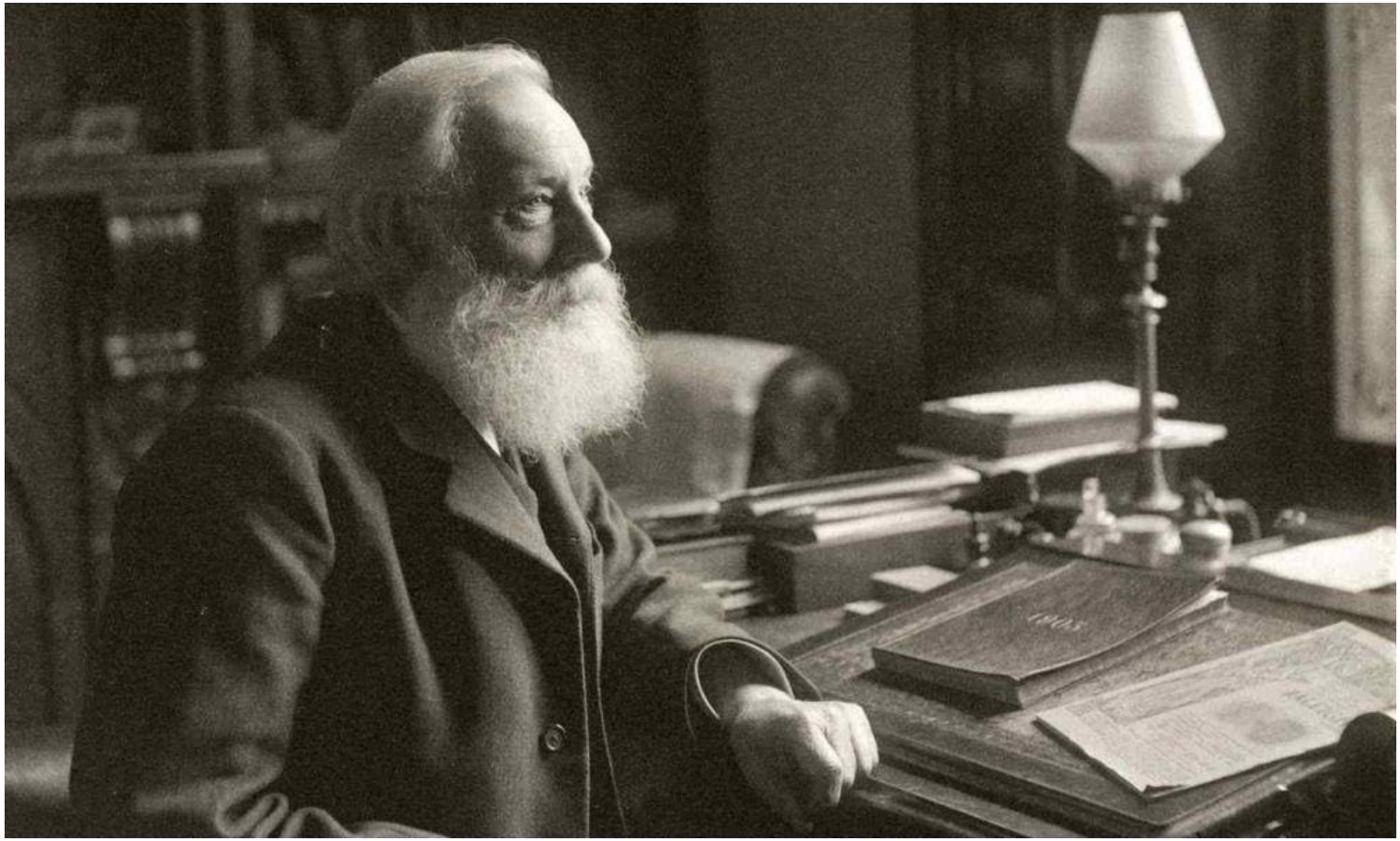


Titanic was considered *unsinkable*.


0 20 40 60 80 100 200 300 400 Feet
BOAT DECK
A "
B "
C "
D "
E "
F "
LOWER "
P
O
N
M
L
K
J
H
G
F
E
D
C
B
A
Propeller shaft tunnel
Turbines
Reciprocating engines
No. 1 Boiler Room
No. 2 Boiler Room
No. 3 Boiler Room
No. 4 Boiler Room
No. 5 Boiler Room
No. 6 Boiler Room
No. 3 Hold
No.2 Hold
No. 1 Hold
Forepeak

Industrial Greed







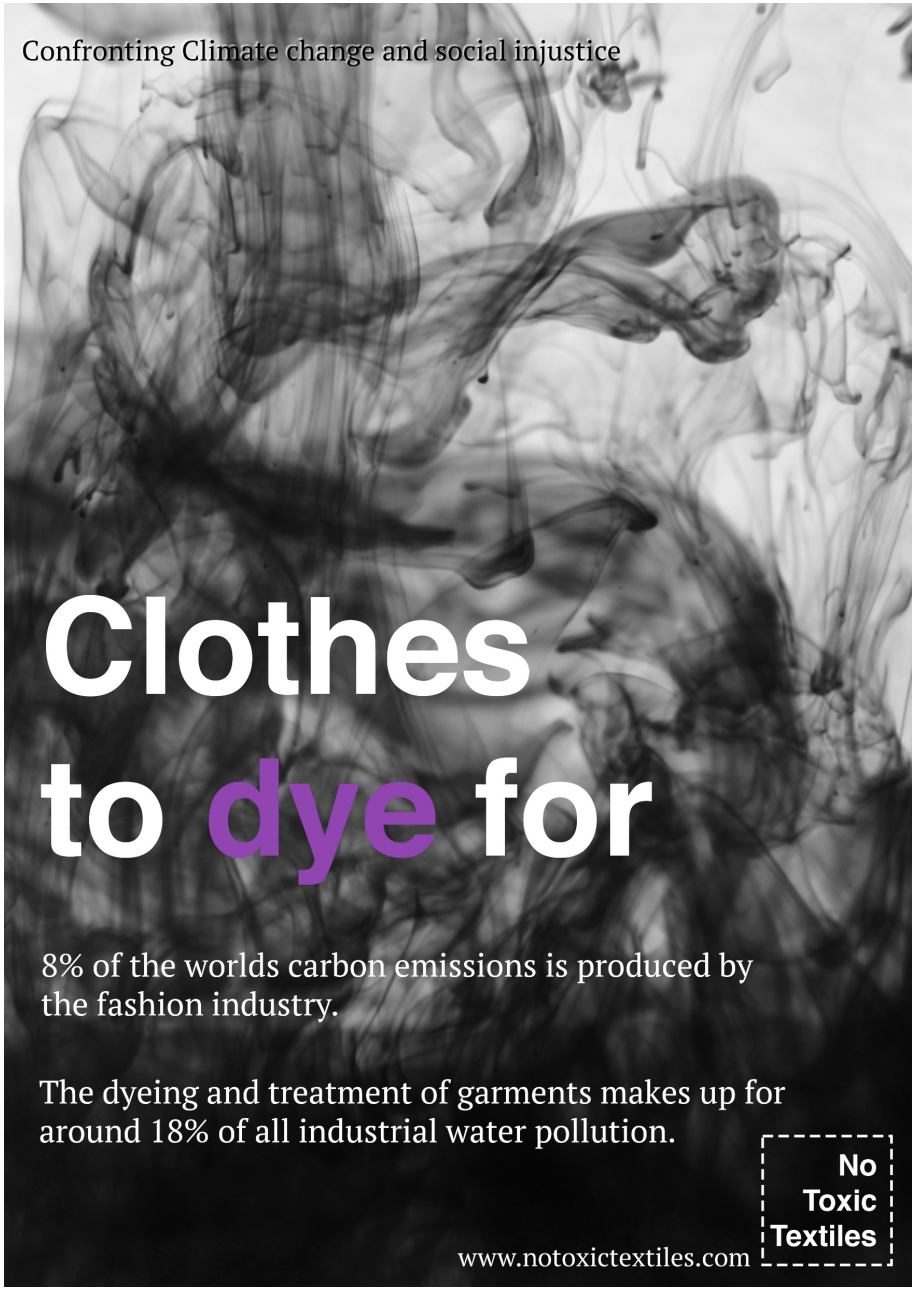




Driven by Consumer Greed


BLAH
BLAH
BLAH
!!!


I made this for
$0,60
I bought this for
$50


Confronting Climate change and social injustice
Clothes
to dye for
8% of the worlds carbon emissions is produced by the fashion industry.
The dyeing and treatment of garments makes up for around 18% of all industrial water pollution.
No Toxic Textiles
www.notoxictextiles.com

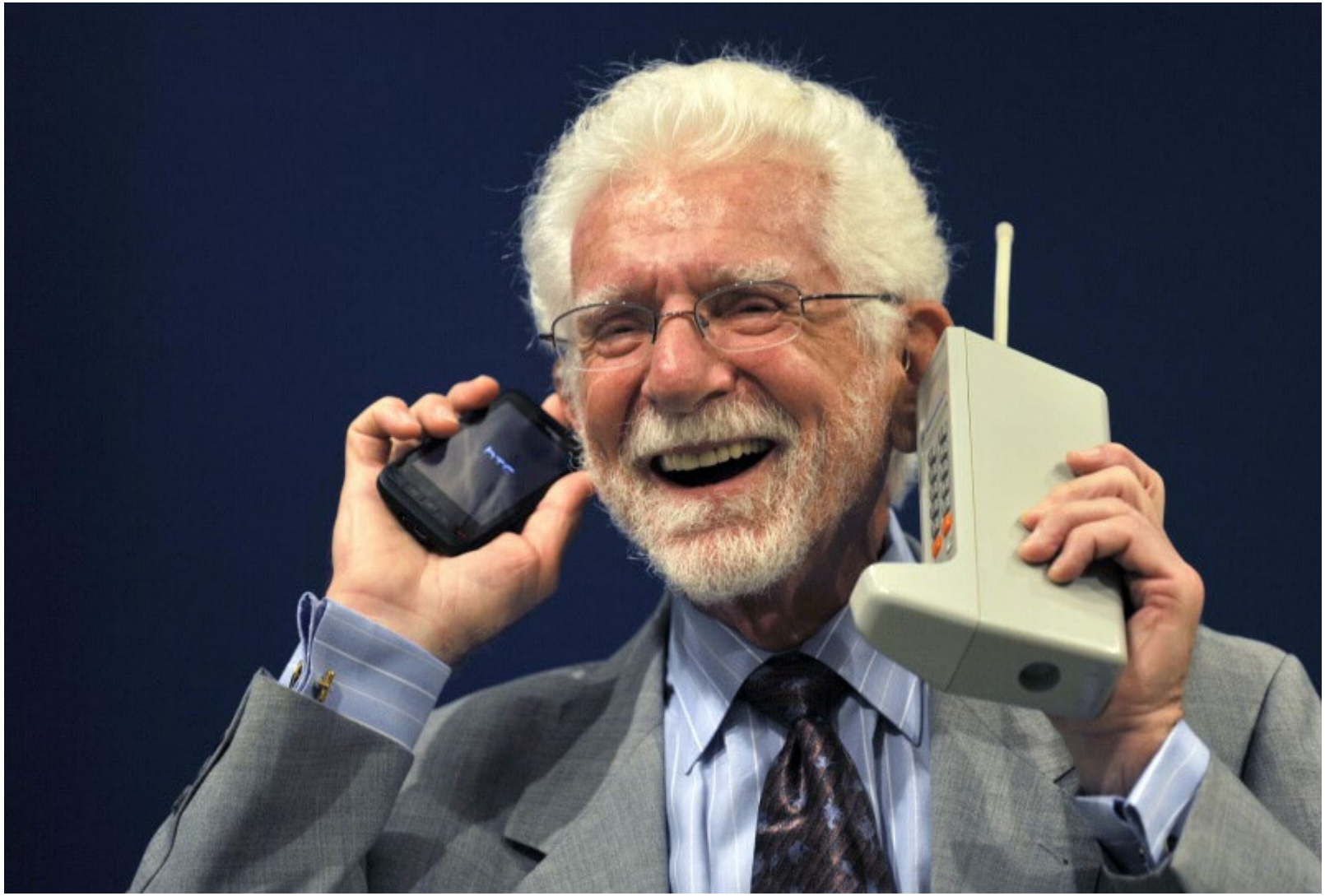
Technological Innovation Pull

Challenging the Innovation Paradigm - Karl-Erik Sveiby

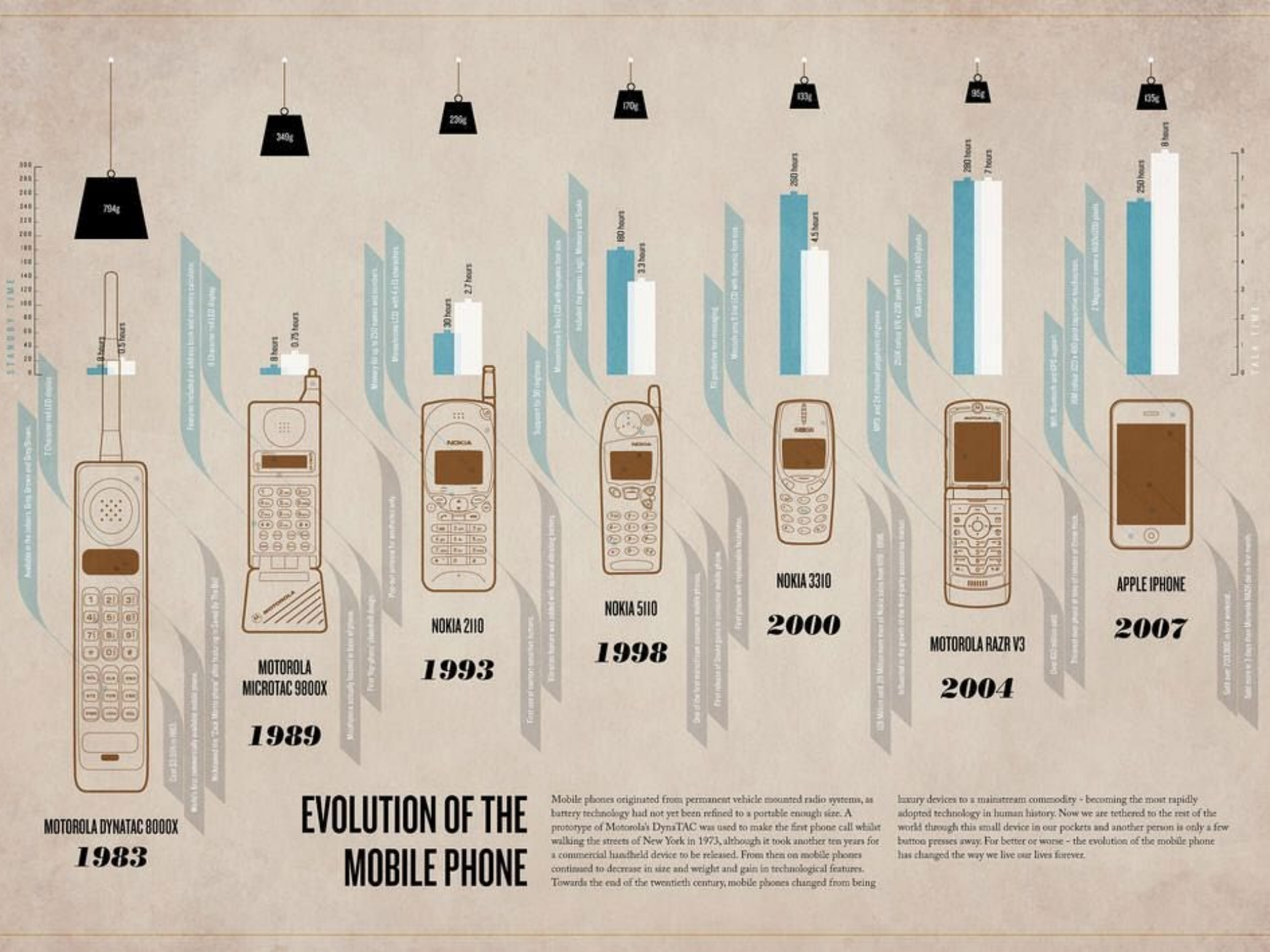
Question:
Has Innovation got the world into the mess it's in today?

Answer:
If innovation got us into this mess, what makes us think that more innovation will get us out of it?


MOTOROLA




Simon



EVOLUTION OF THE MOBILE PHONE

Mobile phones originated from permanent vehicle mounted radio systems, as battery technology had not yet been refined to a portable enough size. A prototype of Motorola's DynaTAC was used to make the first phone call whilst walking the streets of New York in 1973, although it took another ten years for a commercial handheld device to be released. From then on mobile phones continued to decrease in size and weight and gain in technological features. Towards the end of the twentieth century, mobile phones changed from being luxury devices to a mainstream commodity - becoming the most rapidly adopted technology in human history. Now we are tethered to the rest of the world through this small device in our pockets and another person is only a few button presses away. For better or worse - the evolution of the mobile phone has changed the way we live our lives forever.





In 2019, using a mobile phone was a contributory factor in 103 serious road accidents and 17 fatal ones in the UK.*

*According to the 2019 DfT report on Contributory Factors for Reported Road Accidents

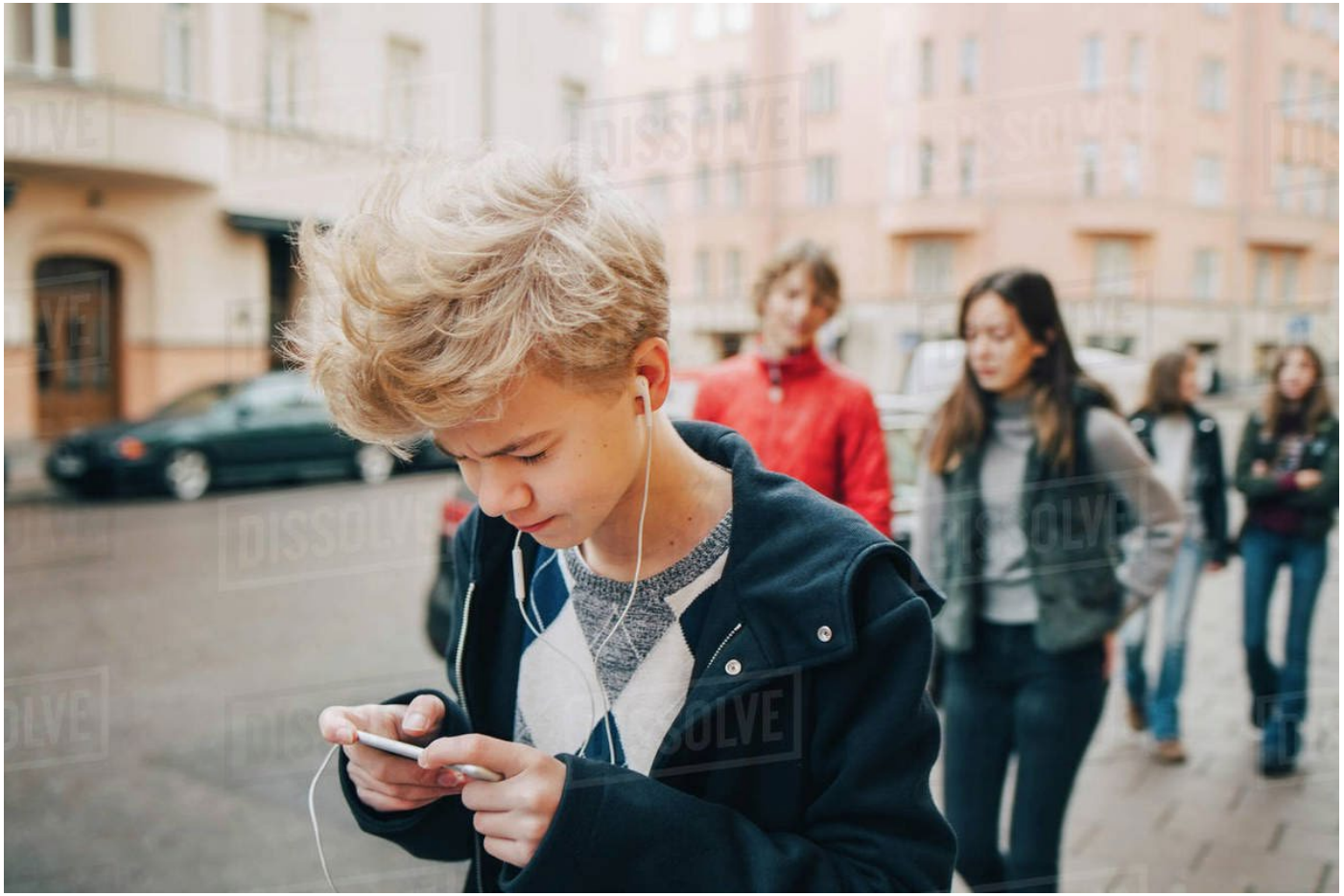





PURE LOYALTY ELECTRONIC DEVICE STOR
PURE LOYALTY ELECTRONIC DEVICE STORAGE
OPEN ALL SCHOOL
As seen on
my FOX
DAILY NE



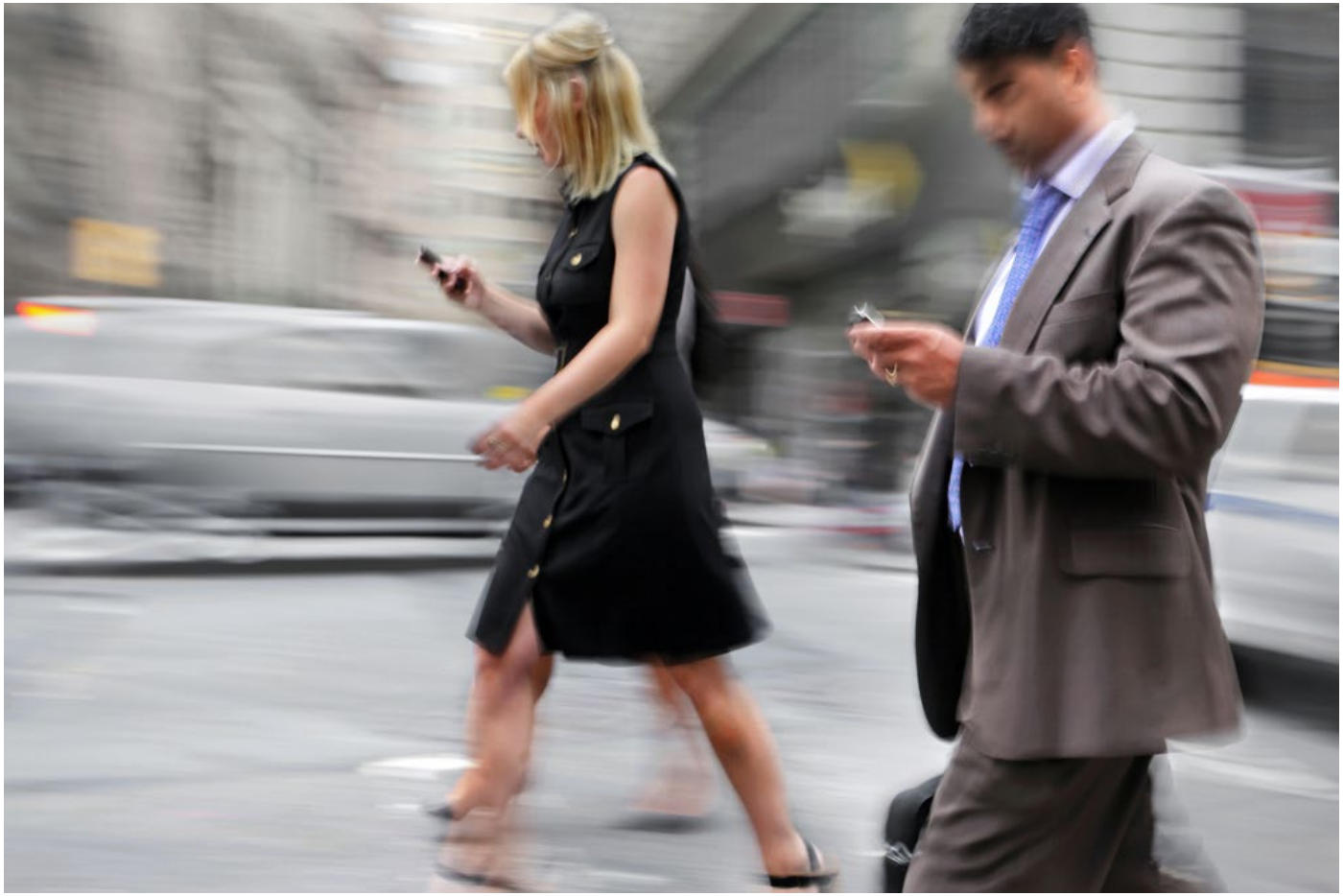

NO_2
Physical Sciences




CELLPHONES
WALK IN THIS LANE
AT YOUR OWN RISK.


PAY ATTENTION WHILE WALKING
YOUR FACEBOOK STATUS UPDATE CAN WAIT.
MEA
Metropolitan Etiquette Authority







The burden of staring at a smartphone

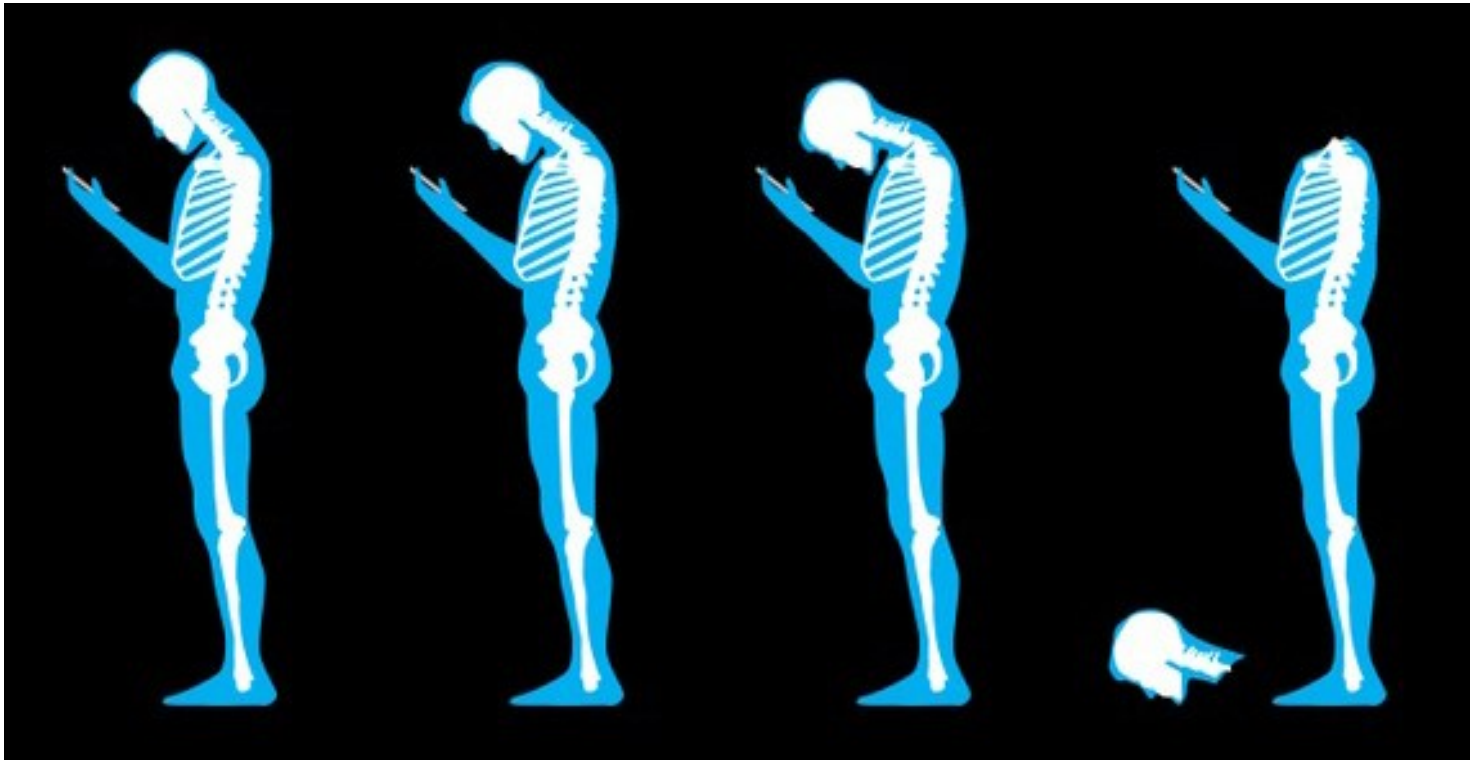
Effective weight on the spine as forward tilt increases

0°	15°	30°	45°	60°
12lb	27lb	40lb	49lb	60lb



GUARDIAN GRAPHIC

SOURCE: SURGICAL TECHNOLOGY INTERNATIONAL



Mobile to Smart phone Terminology shift








10:15 AM
WED, JUN 18
STOCK EXCHANGE
mobile

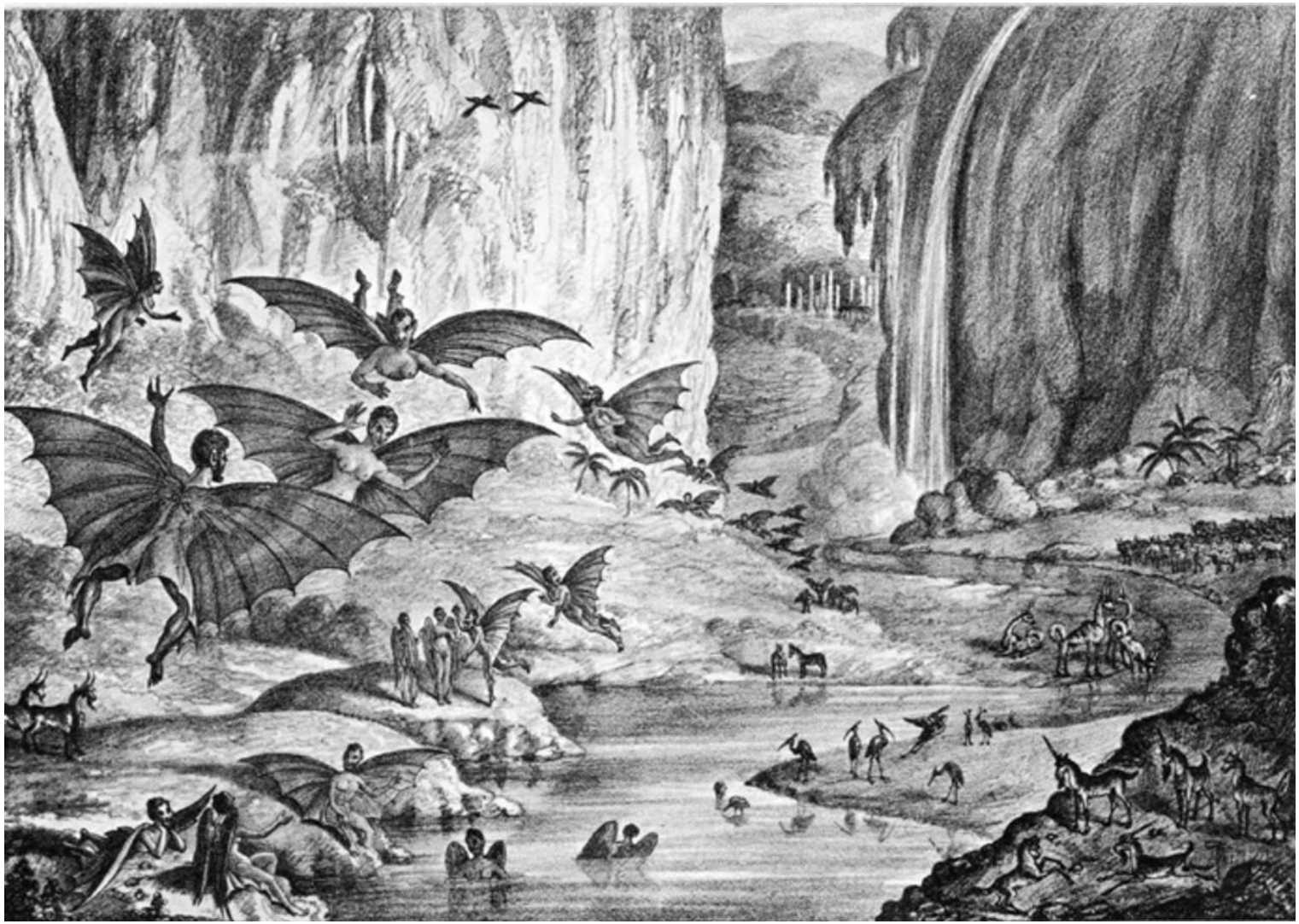

Top 10 minerals powering your mobile phone:
1. Gold
2. Lithium
3. Aluminium
4. Cobalt
5. Copper
6. Lead
7. Nickel
8. Plastics
9. Silver
10. Zinc


Ferrari


CONTROL
WITHIN THE
DIGITAL
SURVEY.
ENVY.
MANIPULATE.
ALL IN ONE SMART DEVICE.
coming in 2021
MANIPULATION
TRACKING
PERSUASIVE
TECHNOLOGY
SURVEILLANCE
CAPITALISM
CONTROL
MONITORING
ADVERT
ECONOMY
MATERIALISTIC
SELF
SURVEILLANCE
DIGITAL
DYSTOPIA
ANXIETY
DEPRESSION
ENVY &
POWER
CAPITALIST
CULTURES
REC
Celebrate
with Amazon Gift Cards
Shop now


"REALISTICALLY SPEAKING, YOU'RE LIVING INSIDE OF A HARDWARE, A BRAIN, THATS MILLIONS OF YEARS OLD. AND THEN THERES THIS SCREEN, AND THEN ON THE OPPOSITE SIDE OF THE SCREEN THERES THESE THOUSANDS OF ENGINEERS AND SUPERCOMPUTERS THAT HAVE GOALS THAT ARE DIFFERENT THAN YOUR GOALS. AND SO, WHO'S GONNA WIN IN THAT GAME? WHO'S GONNA WIN?
- TRISTAN HARRIS

Proliferation of Information






[redacted] 48m
Anti-porn crusader Kate Isaacs wants to get rid of porn because she's scared her own tape is going to come out
http://[redacted]
48
2
31

Even Old Masters cannot escape unintended consequences!




JUST
OIL
HEINZ
TOMATO
JUST
OIL

Lack of understanding to tackling the real problem



Humans know best!


MASTER
CAUTION
PUSH TO RESET

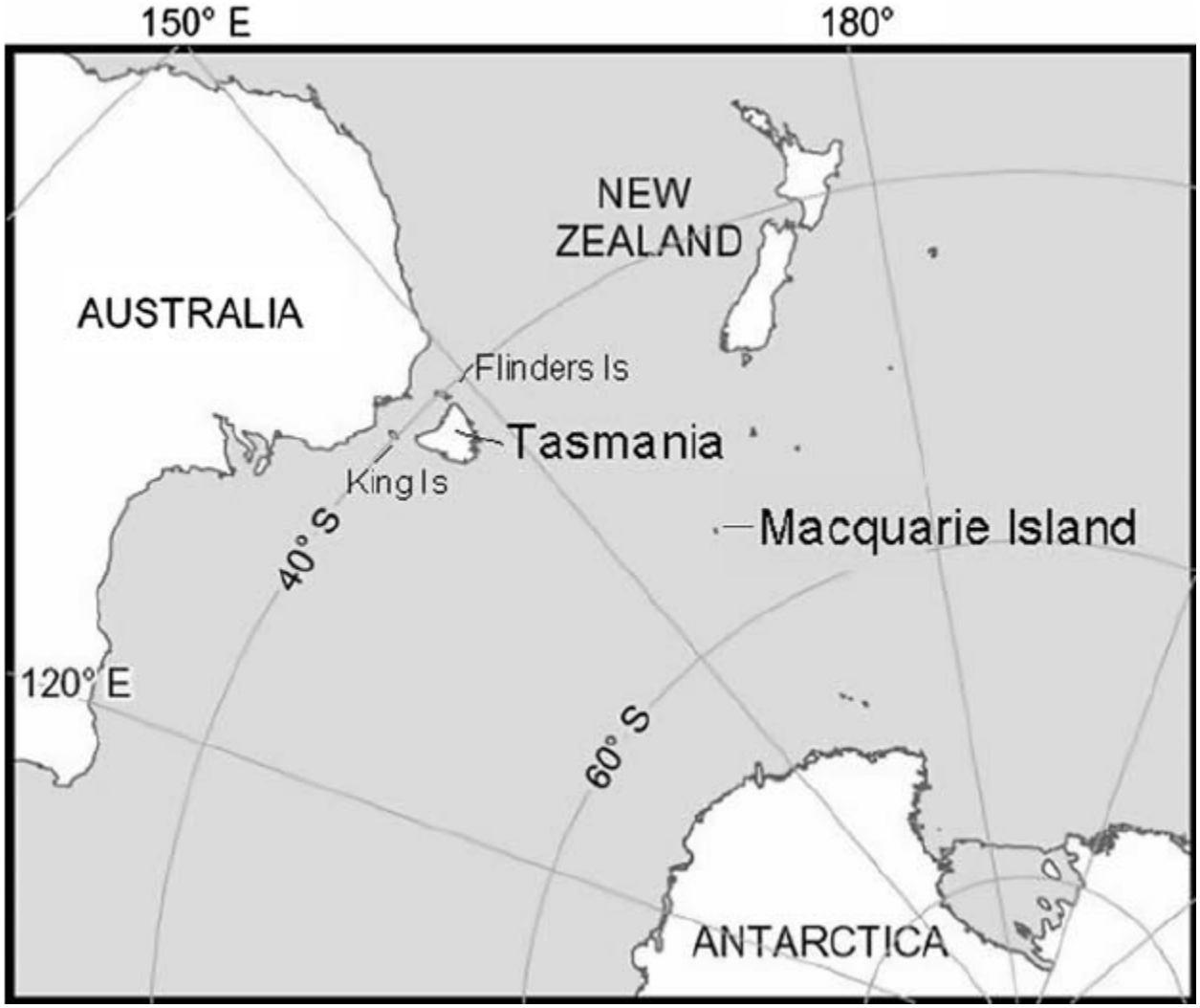
Nature reclaims


20 MI.
Pyongyang
Anbyon
NORTH KOREA
DEMILITARIZED ZONE
Cheorwon
SOUTH KOREA
Seoul
N. KOREA
AREA OF DETAIL
S. KOREA




* 강원도 양구 지역 깃대종
하늘다람쥐 Pteromys volans
쥐목 청설모과
멸종위기 야생동물 2급
솔나리 Lilium cernuum Kom
백합목 백합과
멸종위기 야생식물 2급
* 강원도 인제 지역 깃대종
반달가슴곰 Ursus thibitanus ussuricus
식육목 곰과
멸종위기 야생동물 1급
* 강원도 고성 지역 깃대종
산양 Nemorhaedus caudatus
우제목 소과
멸종위기 야생동물 1급
잔가시고기 Pungitius kaibarae(Tanaka)
큰가시고기목 큰가시고기과
멸종위기 야생동물 2급
검독수리 Aquila chrysaetos
매목 수리과
멸종위기 야생동물 1급
한둑중개 Cottus hangiongensis Mori
둑중개목 둑중개과
멸종위기 야생동물 2급
* 경기도 파주 지역 깃대종
개리 Anser cygnoides
기러기목 오리과
멸종위기 야생동물 2급
독수리 Aegypius monachus
매목 수리과
멸종위기 야생동물 2급
* 경기도 연천 지역 깃대종
새홀리기 Falco subbuteo
매목 매과
멸종위기 야생동물 2급
잿빛개구리매 Circus cyaneus
매목 매과
멸종위기 야생동물 2급
흰꼬리수리 Haliaeetus albicilla
매목 수리과
멸종위기 야생동물 1급
삵 Prionailurus bengalensis
식육목 고양이과
멸종위기 야생동물 2급
* 강원도 철원 지역 깃대종
구렁이 Elaphe schrenckii
유린목 뱀과
멸종위기 야생동물 1급
두루미 Grus japonensis
두루미목 두루미과
멸종위기 야생동물 1급
큼부기 Gallicrex cinerea
두루미목 큼부기과
멸종위기 야생동물 2급
재두루미 Grus vipio
두루미목 두루미과
멸종위기 야생동물 2급
큰기러기 Anser fabalis
기러기목 오리과
멸종위기 야생동물 2급
말똥가리 Buteo buteo
매목 수리과
멸종위기 야생동물 2급
* 강원도 화천 지역 깃대종
담비 Martes flavigula
식육목 족제비과
멸종위기 야생동물 2급
사향노루 Moschus moschiferus
우제목 사향노루과
멸종위기 야생동물 1급
수달 Lutra lutra
식육목 족제비과
멸종위기 야생동물 1급




150° E
180°
NEW
ZEALAND
AUSTRALIA
Flinders Is
Tasmania
King Is
Macquarie Island
40° S
120° E
60° S
ANTARCTICA

Human Psychology


PRESS


Year One Of The 1
START
STOP
ENGINE

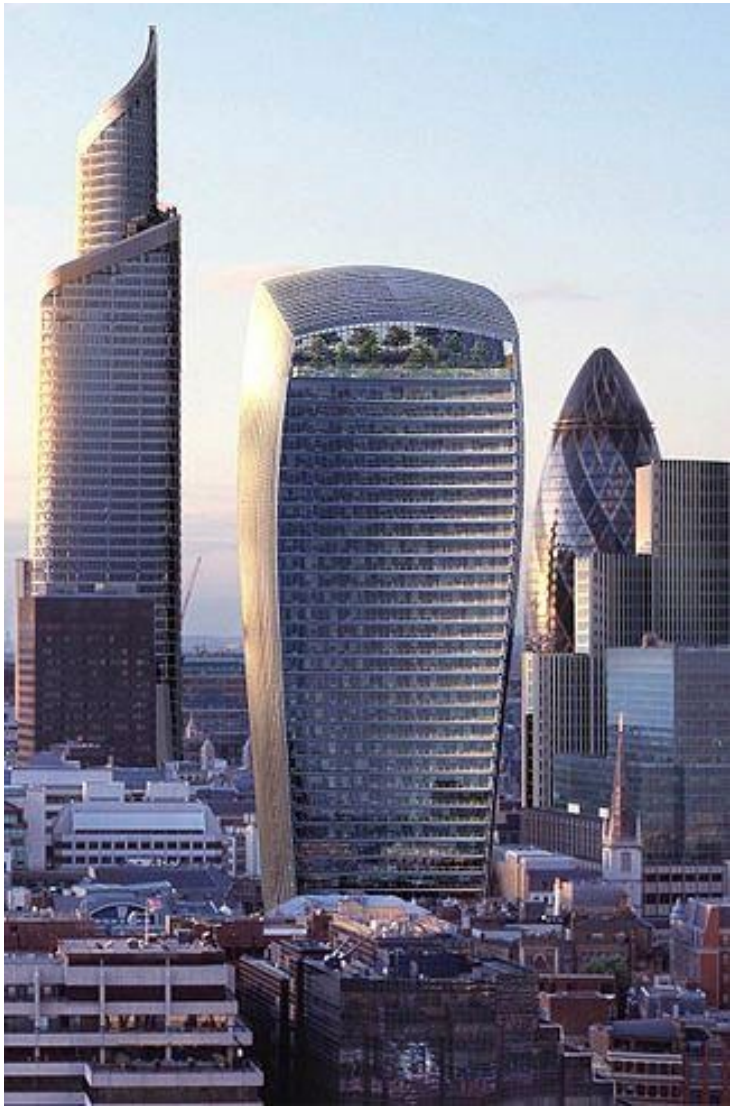




Lack of understanding Culture

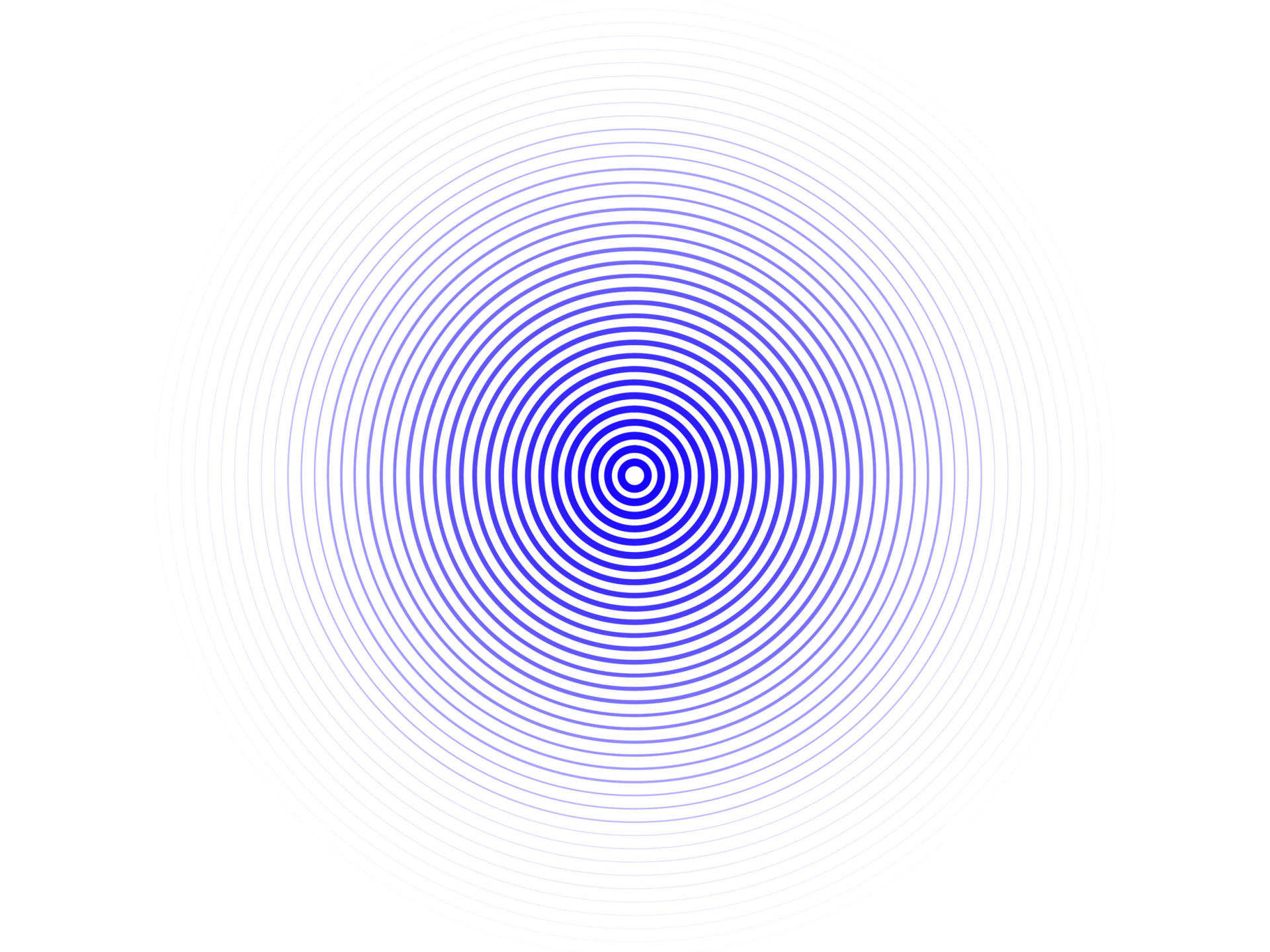

JOHNNIE WALKER
BLACK LABEL
Blended Scotch Whisky
PRODUCT OF SCOTLAND
AGED 12 YEARS
1Liter 40% ALC/VOL (80 PROOF)
JOHNNIE WALKER
BLACK LABEL
Blended Scotch Whisky
AGED 12 YEARS

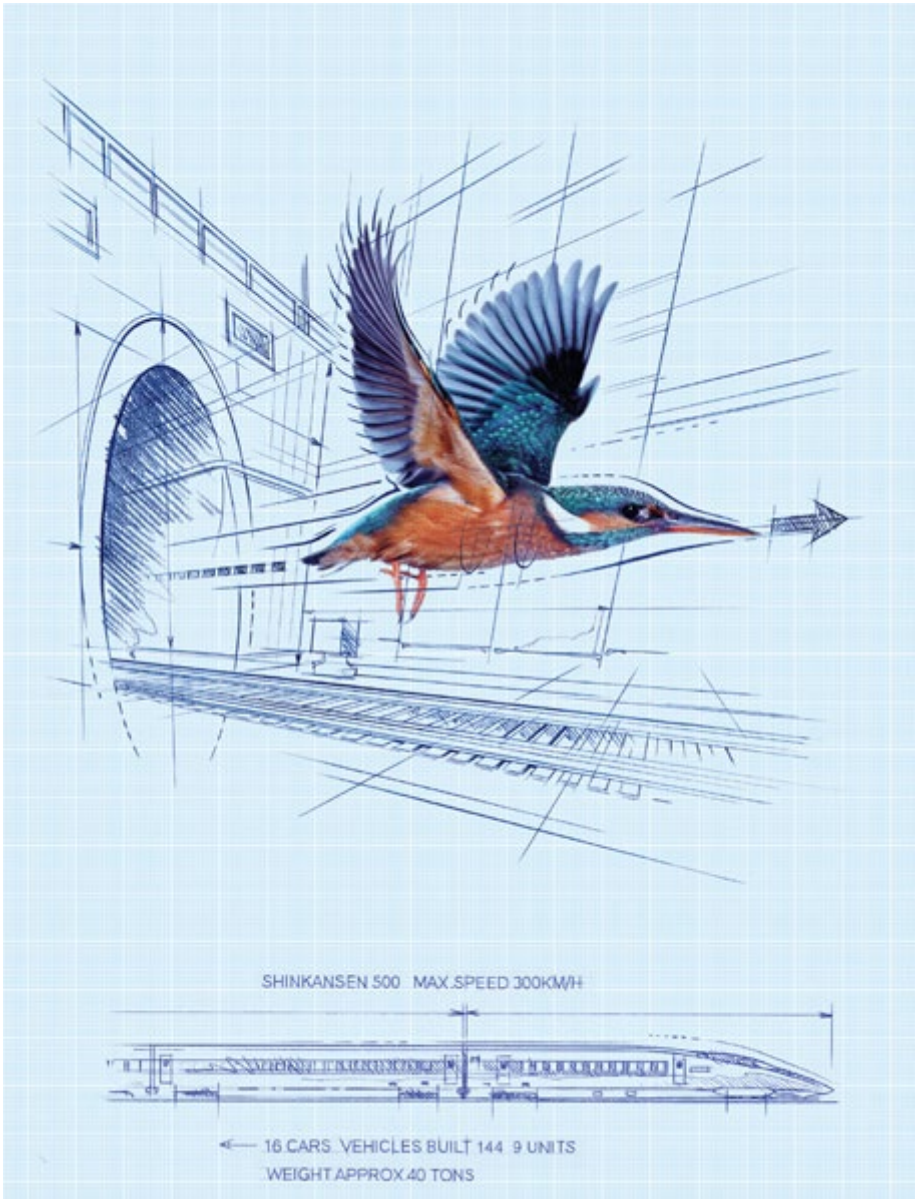
Inadequate Research










SHINKANSEN 500 MAX.SPEED 300KM/H
16 CARS. VEHICLES BUILT 144 9 UNITS
WEIGHT APPROX 40 TONS



Special page

Create account

Username (help me choose)

ScunthorpeM181

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Unforeseen or Predicable?





Addiction





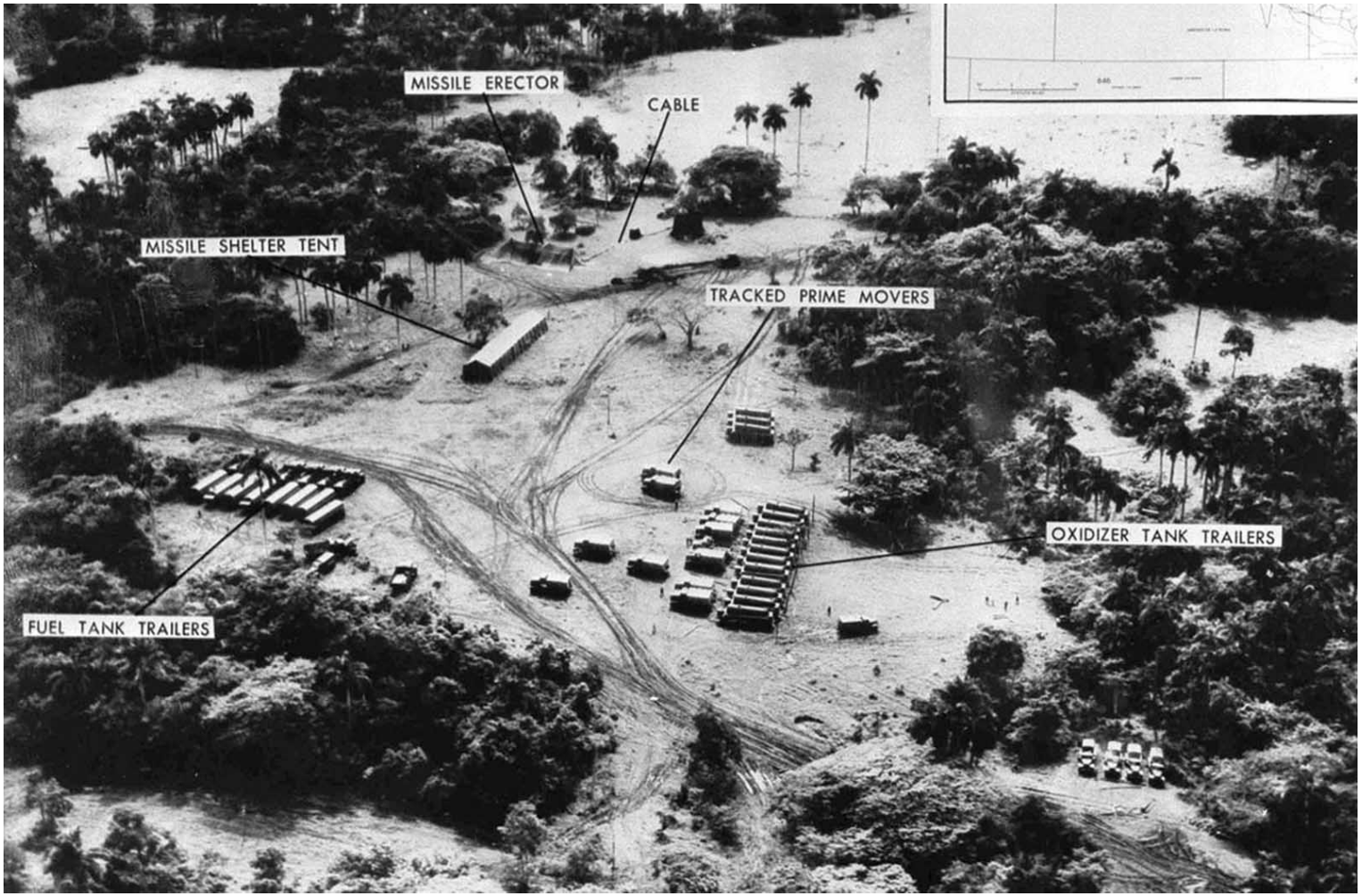

VIRTUAL REALITY



Historical






MISSILE ERECTOR
CABLE
MISSILE SHELTER TENT
TRACKED PRIME MOVERS
OXIDIZER TANK TRAILERS
FUEL TANK TRAILERS

Vandalism


RIVER
UCK

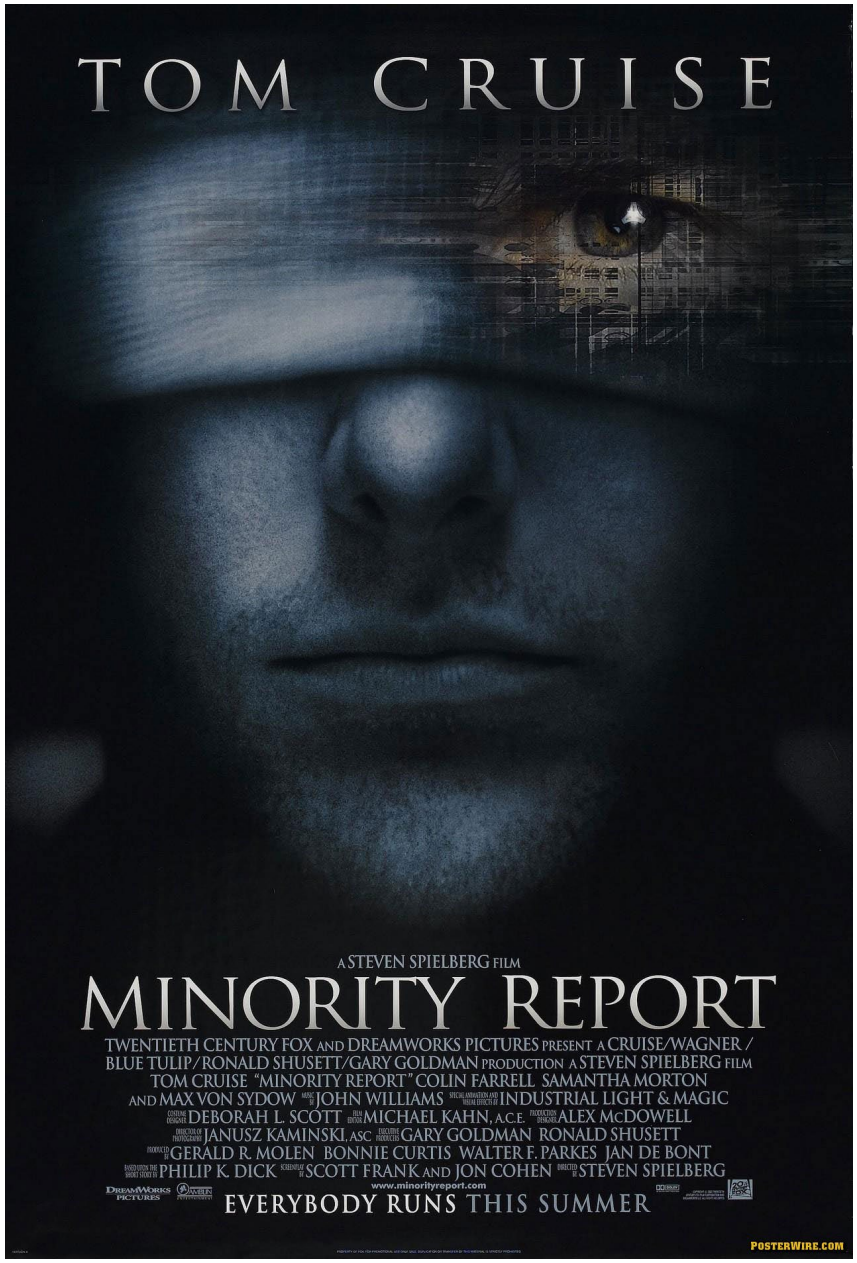
Medical


ASPIRIN


Viagra
Professional
50mg


1
STAKEHOLDER(S) DECISION
Patients suffering high blood pressure
2
INTENDED CONSEQUENCES
"...And then what?"
1ST ORDER
Reduce blood pressure symptoms
3
UNINTENDED CONSEQUENCES
"...And then what?"
2ND ORDER
Successfully treats erectile dysfunction
4
UNINTENDED CONSEQUENCES
"...And then what?"
3RD ORDER
Drug dealer markets
5
OUTCOME CONSEQUENCES
"...And then?"
OUTCOMES
Middle-aged men increased sexual desire
Increased divorce rates
Long-term vision damage in regular users




TOM CRUISE
A STEVEN SPIELBERG FILM
MINORITY REPORT
TWENTIETH CENTURY FOX AND DREAMWORKS PICTURES PRESENT A CRUISE/WAGNER / BLUE TULIP/RONALD SHUSETT/GARY GOLDMAN PRODUCTION A STEVEN SPIELBERG FILM
TOM CRUISE "MINORITY REPORT" COLIN FARRELL SAMANTHA MORTON
AND MAX VON SYDOW MUSIC BY JOHN WILLIAMS SPECIAL ANIMATION AND VISUAL EFFECTS BY INDUSTRIAL LIGHT & MAGIC
COSTUME DESIGNER DEBORAH L. SCOTT FILM EDITOR MICHAEL KAHN, A.C.E. PRODUCTION DESIGNER ALEX McDOWELL
DIRECTOR OF PHOTOGRAPHY JANUSZ KAMINSKI, ASC EXECUTIVE PRODUCERS GARY GOLDMAN RONALD SHUSETT
PRODUCED BY GERALD R. MOLEN BONNIE CURTIS WALTER F. PARKES JAN DE BONT
BASED ON THE SHORT STORY BY PHILIP K. DICK SCREENPLAY BY SCOTT FRANK AND JON COHEN DIRECTED BY STEVEN SPIELBERG
www.minorityreport.com
DREAMWORKS PICTURES
EVERYBODY RUNS THIS SUMMER
POSTERWIRE.COM



Evil material




Billiard Ball
Made in 1868 of Cellulose Nitrate,
Celluloid, The Gear
John Wesley Hyatt Discovered
This First Plastics Resin.


2/1-ST 022

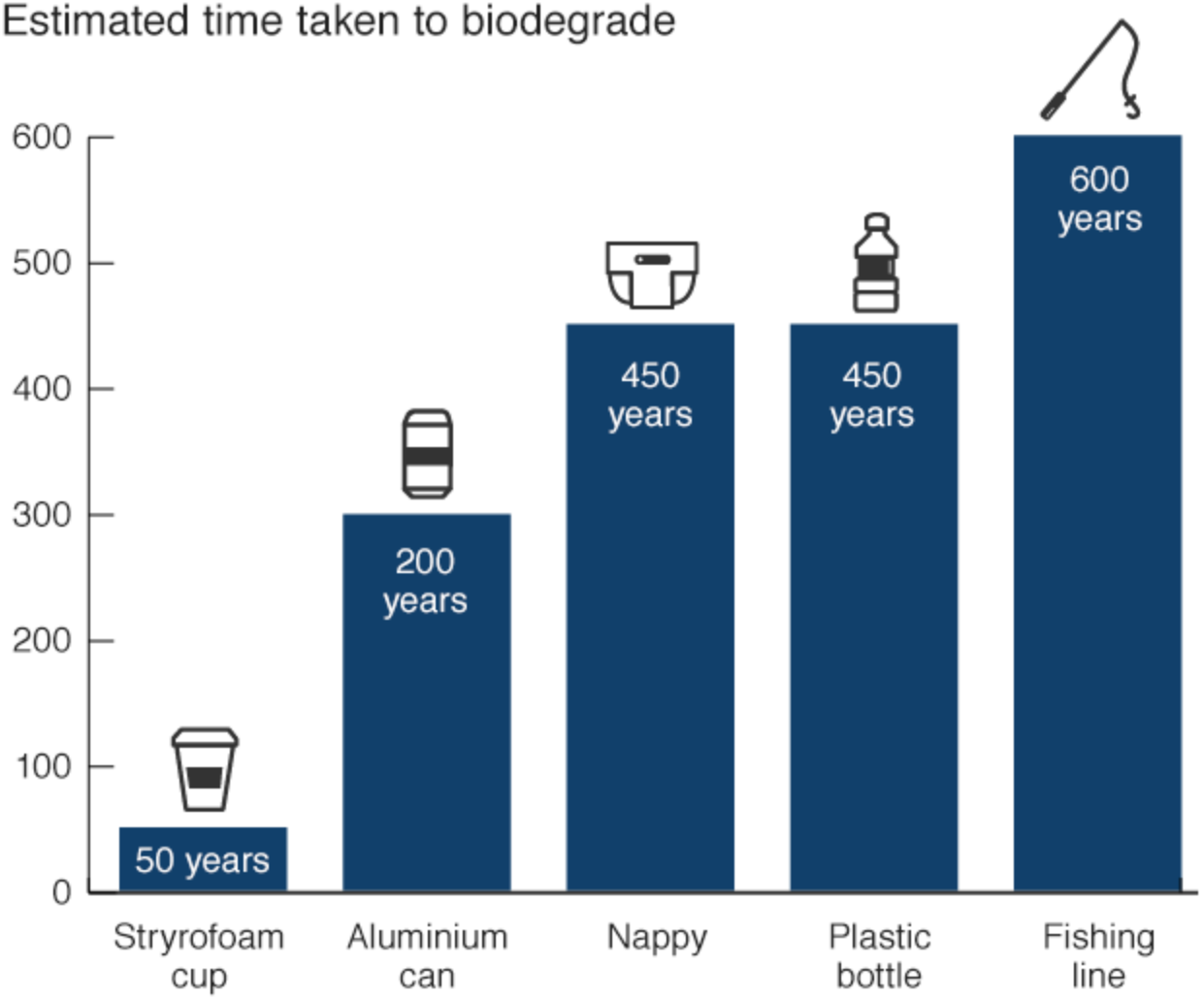

4 3 2 1 0
5
6
7 8 9

Global Phenomenon of Bottled Water


Perrier
Perrier
Perrier
Perrier

How long til they're gone?

Estimated time taken to biodegrade



Exact time will vary by product type and environmental conditions

Source: NOAA / Woods Hole Sea Grant

BBC

The Humble plastic bag

April 27, 1965 S. G. THULIN 3,180,557

BAG WITH HANDLE OF WELDABLE PLASTIC MATERIAL

Filed July 10, 1962

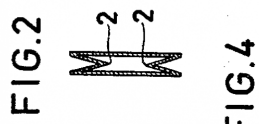


FIG.2

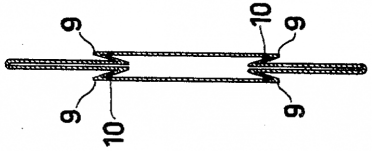


FIG.4

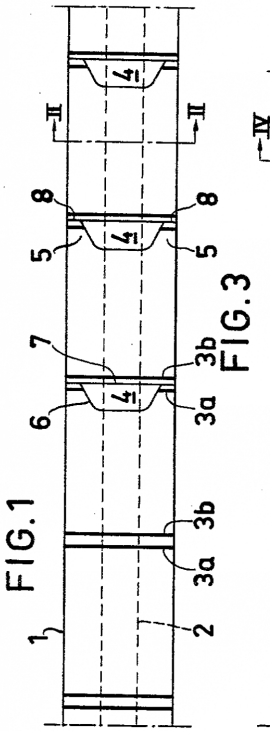


FIG.1

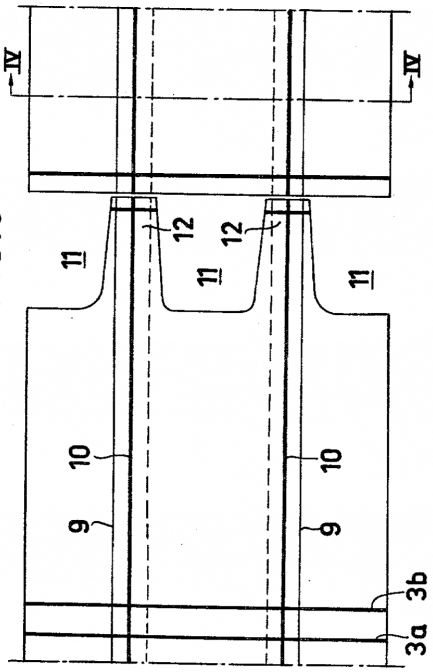


FIG.3



INVENTOR
STEN GUSTAF THULIN

06.2018

NATIONAL GEOGRAPHIC



PLANET OR PLASTIC?

18 billion pounds of plastic ends up in the ocean each year. And that's just the tip of the iceberg.


Coca-Cola
classic


Coca-Cola





Nature has been making Plastics for millennia.
But these can be completely broken down through natural decomposition processes.



Scientists are yet to discover ways of reproducing this phenomena.

(most) industrially made Plastics are (chemically) inert.
It is how we, as humans, treat this valuable commodity.

Are Unknown Consequences of design manageable?

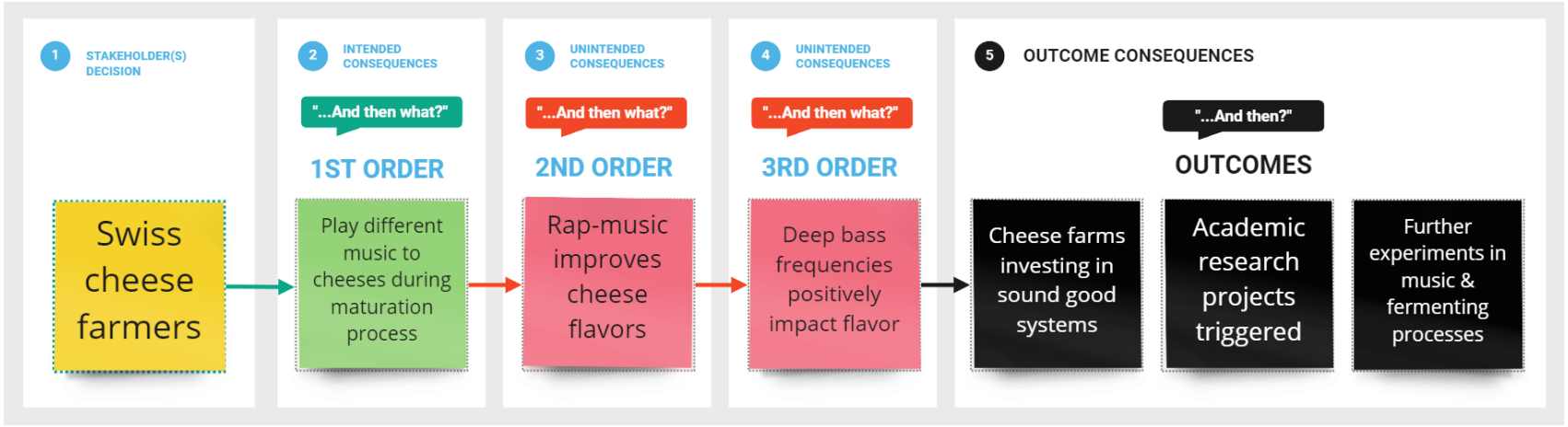
History is repeating itself, will Humanity ever learn?

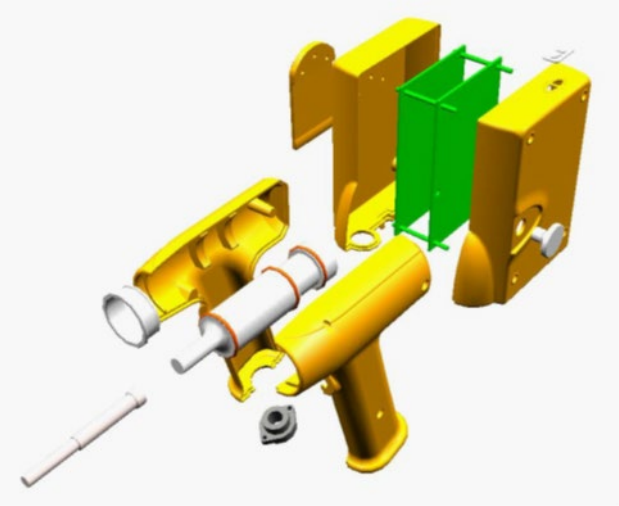
“Design is about restriction; you need to be aware of your own limitations and that of your designs.”

Alain Dujardin 31.05.2017

Who is responsible for Unintended Consequences?

It is YOUR work
OWN IT!


1
STAKEHOLDER(S) DECISION
Swiss cheese farmers
2
INTENDED CONSEQUENCES
"...And then what?"
1ST ORDER
Play different music to cheeses during maturation process
3
UNINTENDED CONSEQUENCES
"...And then what?"
2ND ORDER
Rap-music improves cheese flavors
4
UNINTENDED CONSEQUENCES
"...And then what?"
3RD ORDER
Deep bass frequencies positively impact flavor
5
OUTCOME CONSEQUENCES
"...And then?"
OUTCOMES
Cheese farms investing in sound good systems
Academic research projects triggered
Further experiments in music & fermenting processes







Patents Title: W0038916A1: Repair of Flaws or Voids in Bodies: Published: 06.07.2000
Patent Title: W09739879A1: Damage Repair: Published: 30.10.1997

Or should we take this stance for Unintended Consequences?

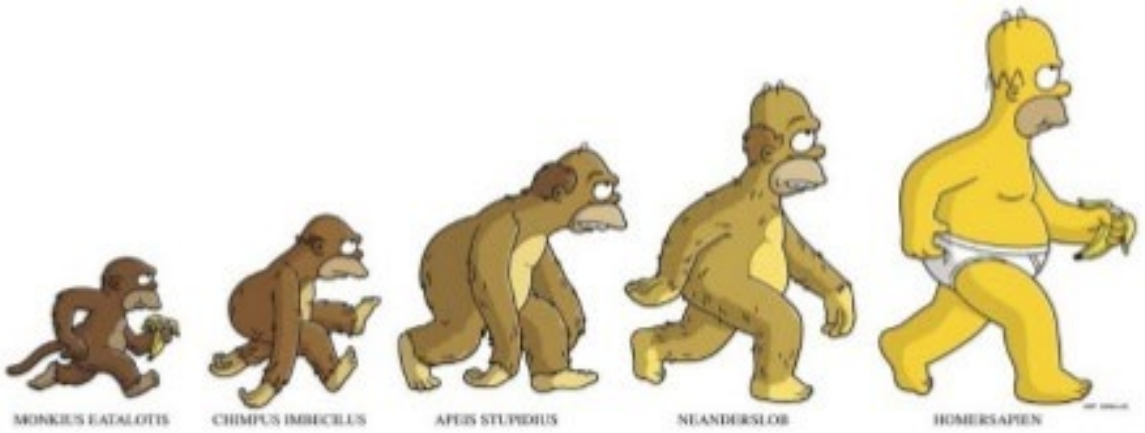
Three little sentences that will get you through life no matter the consequences.

Three little sentences that will get you through life no matter the consequences.

Number 1: Cover for me.
Number 2: Oh, good idea, Boss!
Number 3: It was like that when I got here.

After all ……

we're all human.



HOMERSAPIEN

Our ingenuity has not only changed our world - it has changed us. Focusing on immediate benefits, we rarely pause to consider the longer-term costs of innovation.

Peter Gluckman & Mark Hanson – Ingenious 2019

Ingenious



The Unintended Consequences
of Human Innovation

PETER GLUCKMAN · MARK HANSON

Thank you

Matt Archer
04.11.22