

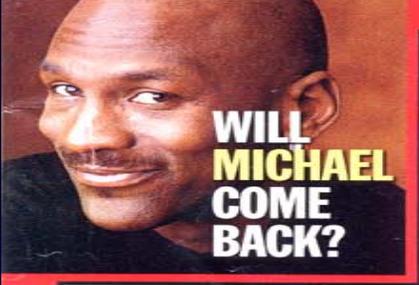
Environmental Health Literacy: Can the public be healthy without it?

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Dept. of Community and Preventive Medicine

Mount Sinai School of Medicine

**We live in an ever changing
landscape of health and
environmental risk (& fear)**



**WILL
MICHAEL
COME
BACK?**

DEATH IN GENOA ■ IN DEPTH: RACIAL PROFILING

TIME



**The latest
science: How
they hunt, where
they roam and
how to get out
of their way**

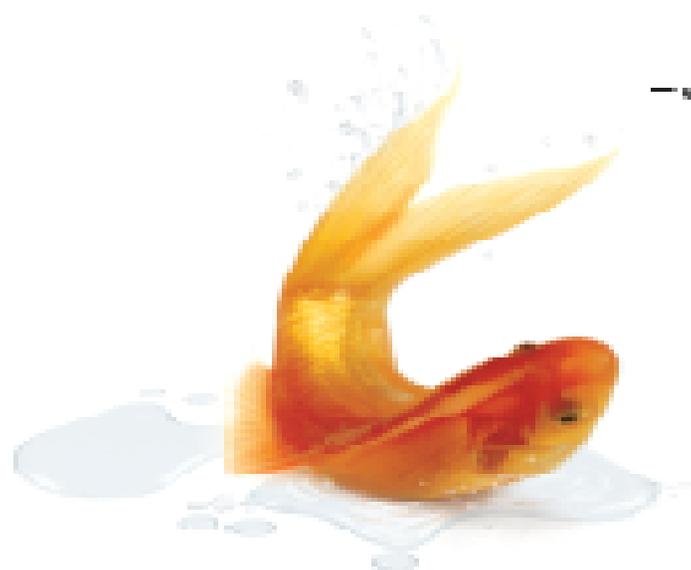
SUMMER OF THE

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ASTHMA ATTACK
I FEEL LIKE A FISH
WITH NO WATER.”**

-JESSE, AGE 5



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KATRINA: THE STORM WE'VE ALWAYS FEARED

The Times-Picayune



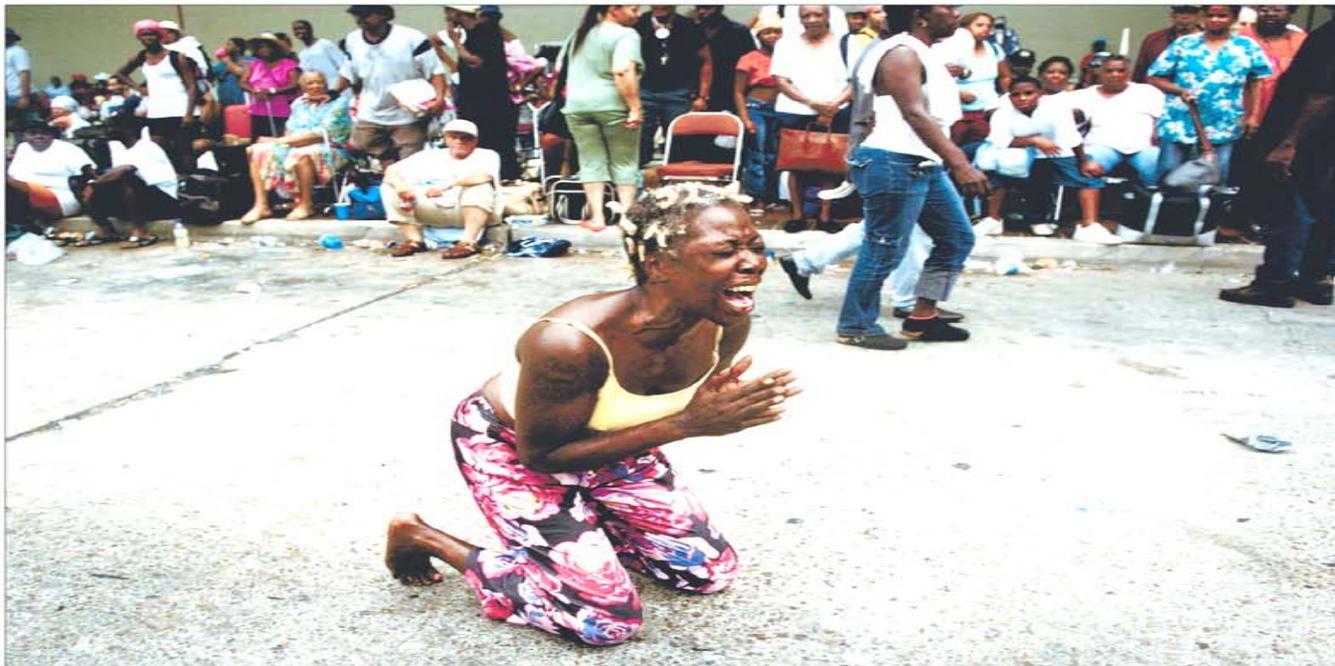
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FRIDAY, SEPTEMBER 2, 2005

HURRICANE EDITION

'HELP US, PLEASE'

AFTER THE DISASTER, CHAOS AND
LAWLESSNESS RULE THE STREETS



WHO warns of more bird flu cases



- ◆ Thursday, September 22, 2005;
Posted: 6:53 p.m. EDT (22:53 GMT)

Health workers inspect an exotic bird at a bird market in Jakarta, Indonesia, earlier this week.

GENEVA (CNN) -- The World Health Organization has announced a third confirmed case of H5N1 avian flu in Indonesia and warns of more to come.

So, what's the problem with environmental health outreach / education/ communications?

- ◆ Often top down – deficit model
- ◆ Rarely start with where people are at
- ◆ Seldom mindful of fundamental literacy
- ◆ Not mindful of health & environmental literacy principles and guidelines

What is health literacy?

- ◆ **The wide range of skills, and competencies that people develop over their lifetimes to seek out, comprehend, evaluate, and use health and environmental information and concepts to make informed choices, reduce health risks, and increase quality of life.**
 - (Zarcadoolas, Pleasant & Greer, 2003; 2006)

Benefits of health literacy

- ◆ A health literate person is able to use **health concepts and information generatively – applying information to novel situations.** A health literate person is able to participate in the ongoing public and private dialogues about health, medicine, scientific knowledge, and cultural beliefs.

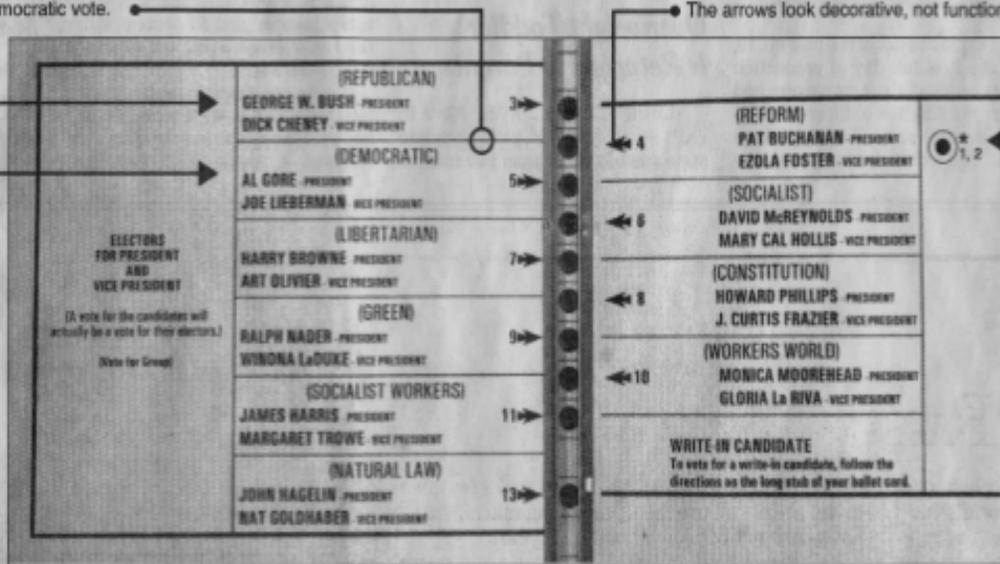
Communication seems easier
than it really is.

DEFECTIVE EQUIPMENT: The Palm Beach County Ballot

The divider line between Republican and Democrat appears to be pointing to the second dot, suggesting it is the correct one for a Democratic vote.

Bush is first on the ballot, and the punch dot for the Republicans is also first. This is good design, making it highly unlikely that a Bush voter would make an error.

The Democrats are listed second, but the correct punch dot for them is third. Since it is logical to assume that one punches the second dot on the ballot to vote for them, this is unsuccessful design.



The arrows look decorative, not functional.

*1 This is the logical place for the dots corresponding to the second column of party listings. (Florida law actually specifies that voters must mark the box to the right of the ballot. The county election officials foolishly violated this law.)

*2 Since the English language is read from left to right, it is natural to expect that the dot will appear after the name. The sudden shift in the pattern – putting the dots for the right column on the left – is likely to confuse voters.**

**** Many official bodies and corporations approve products or documents that are incompetently designed. When a design causes problems for a significant number of people, even if it was "approved," the product is usually recalled, and sometimes reparations are made.**

Paula Scher is a partner at Pentagram Design in New York.



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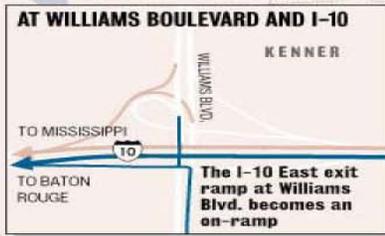
- 5-day Forecast
- Hurricane Center

CONTRAFLOW PLAN

Six different routes and four contraflow points are part of the new evacuation plan for the metro area. Officials say the new plan will prevent the heavy traffic and confusion that occurred in September during Hurricane Ivan.



HOW TO JOIN THE CONTRAFLOW:



Click here for an interactive .pdf of this map

4 Domains of Health/ Environmental Literacy

◆ Fundamental literacy

◆ Science literacy

◆ Civic literacy

◆ Cultural literacy

(Zarcadoolas, Pleasant & Greer, 2003; 2004;
2006)

Functional literacy

- The National Adult Literacy Study (NALS 1993) 49% (almost half) of all Americans do not have functional literacy above the 8th grade level.
- Twenty five percent (25%) are functionally illiterate – that's 40 to 44 million adults. Another 50 million adults are only marginally literate.

Policy cont'd ...

- ◆ Institute of Medicine consensus report on Health Literacy (2004)
- ◆ Agency for Healthcare Research and Quality (AHRQ) evidence report/ technology assessment (#87) 2004
- ◆ American Medical Association
 - Health literacy toolkit (incl. video)
- ◆ Partnership for Clear Health Communication (AMA, Pfizer, many others)

Fundamental Literacy

- Reading
- Writing
- Speaking
- Numeracy



Definition

What is anthrax?

What is the case definition for anthrax?

What is anthrax?

Bacillus anthracis, the etiologic agent of anthrax, is a large, gram-positive, non-motile, spore-forming bacterial rod. The three virulence factors of B. anthracis are edema toxin, lethal toxin and a capsular antigen. Human anthrax has three major clinical forms: cutaneous, inhalation, and gastrointestinal. If left untreated, anthrax in all forms can lead to septicemia and death.

What is the case definition for anthrax?

A confirmed case of anthrax is defined as

1. a clinically compatible case of cutaneous, inhalational, or gastrointestinal illness that is laboratory-confirmed by isolation of B. anthracis from an affected tissue or site, or
2. a clinically compatible case of cutaneous, inhalational, or gastrointestinal disease with other laboratory evidence of B. anthracis infection based on at least two supportive laboratory tests.

(Source: <http://www.bt.cdc.gov/DocumentsApp/FAQAnthrax.asp>)

Science Literacy

- knowledge of fundamental scientific concepts, scientific process
- comprehend technical complexity,
- understand technology
- understand scientific uncertainty and that rapid change in the accepted science is possible.

NSF, Public Understanding of Science

- ◆ Between 5 and 15% of the public qualify as scientifically literate.
- ◆ 18% can be considered an attentive science public.

Types of anthrax

The same bacterium (*Bacillus anthracis*) produces toxins that cause three types of anthrax. In cases of just exposure, one has a small amount of bacteria, not enough to cause the disease. Anthrax is not contagious.

1 Inhalation anthrax

The most likely form for use in bioterrorism. **Symptoms:** fever, malaise, fatigue and sometimes a dry cough. Then there's often a period of improvement that's followed by a decline — trouble breathing, sweating, bluish discoloration of the skin. The patient usually goes into shock and dies 24 to 36 hours after the severe symptoms begin. It is fatal in 80 percent to 90 percent of cases unless treated early.

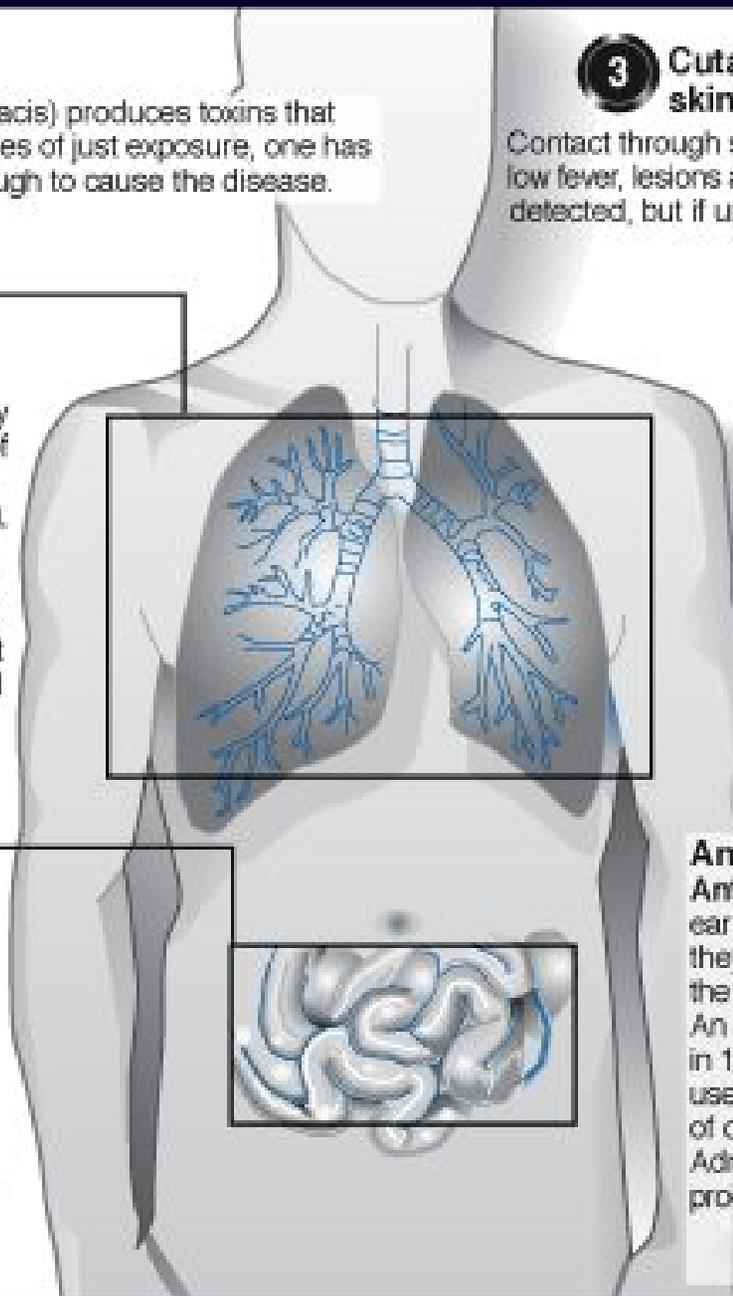
2 Gastrointestinal anthrax

By eating meat from infected animals, you can get a gastrointestinal form of anthrax. **Symptoms:** vomiting of blood, abdominal pain, nausea and diarrhea. It's very rare, at least in the USA, and is 25 percent to 60 percent fatal, according to the New York City Department of Health. No cases have been reported.

Source: USA TODAY research

3 Cutaneous or skin anthrax

Contact through scrapes or cuts. **Symptoms:** low fever, lesions and swelling. It's usually easily detected, but if untreated proves fatal in up to 20 percent of cases.



Anthrax treatment

Antibiotics: Helpful only at the earliest stages of infection because they fight bacteria, not the toxins the bacteria produce. **Vaccination:** An anthrax vaccine was licensed in 1970 and is reserved for military use. Supplies are limited because of delays getting Food and Drug Administration approval for a new production facility in Lansing, Mich.

Suzy Parker, USA TODAY

Civic Literacy

- ◆ enable citizens to become aware of public issues, to participate in critical **dialogue** about them, and to become involved in **decision-making processes**.
 - media literacy skills,
 - knowledge of civic and governmental systems and processes,
 - knowledge of power, inequity and other hierarchical relationships, and
 - knowledge that personal behaviors and choices affect others in a larger community and society



**IF SOMEONE WERE
SMOKING HERE**

**SOMEONE COULD GET
LUNG CANCER HERE.**



AFP/Gett
3:47 AM

Two residents wade through chest-deep water after finding bread and soda from a local grocery store after Hurricane Katrina came through the area in New Orleans, Louisiana. (AFP Graythen)

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[photo caption reads]

Two residents wade through chest-deep water after finding bread and soda from a local grocery store after Hurricane Katrina came through the area in New Orleans, Louisiana. (AFP)



AP Associated Press AP - Tue

A young man walks through chest-deep flood water after looting a grocery store in New Orleans on Tuesday, Aug. 30, 2005. Flood waters continue to rise in New Orleans after Hurricane Katrina did extensive damage when it made landfall on Monday.

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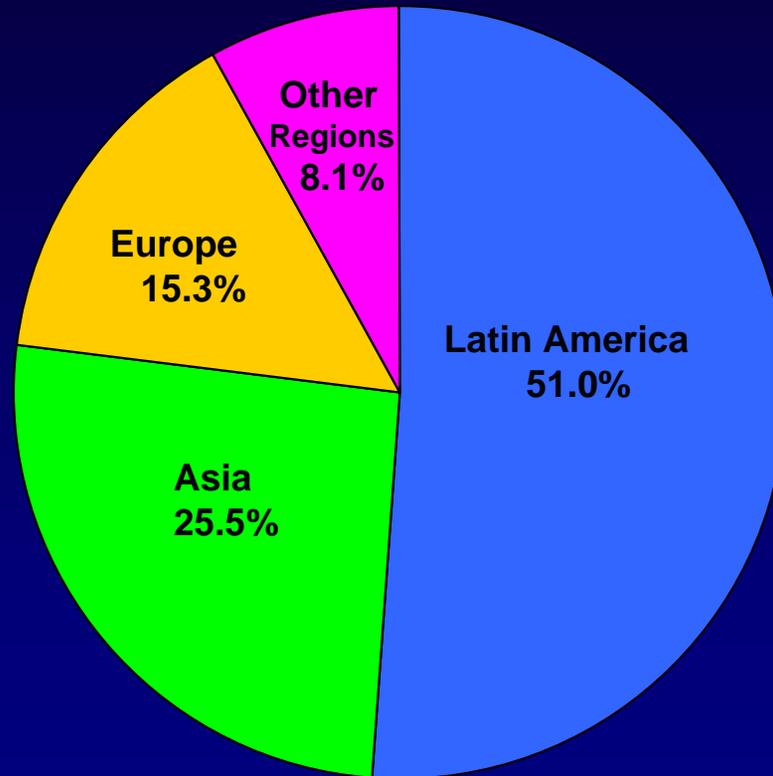
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A young man walks through chest deep flood water after looting a grocery store in New Orleans on Tuesday, Aug. 30, 2005. Flood waters continue to rise in New Orleans after Hurricane Katrina did extensive damage when it made landfall on Monday. (AP)

Cultural Literacy

- ◆ Ability to recognize, understand and use the **collective beliefs, customs, world-view, and social identity** of diverse individuals to interpret and act on information. Bilateral - experts should understand aspects of the culture of the recipient and visa versa.

Percent Distribution of Foreign Born by World Region of Birth: 2000



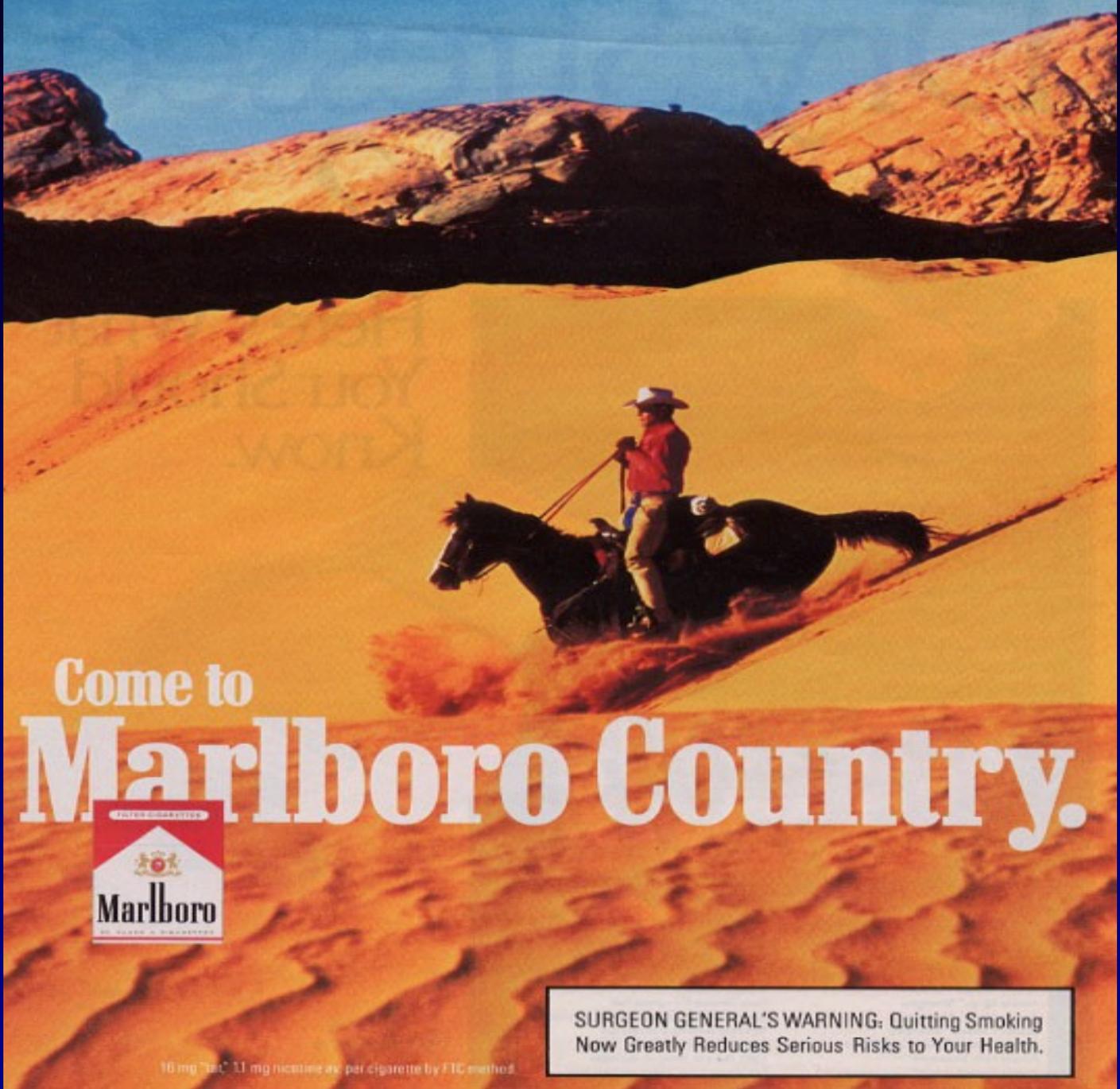


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THE NEW YORKER



There is little capacity for health and environmental equity without good, effective communication. There is no civil society without it.

Guidelines

- ◆ Understand people's current conceptions and cultural models for understanding and acting on environment/ health information
- ◆ Collaborate to tailor communications to their environmental health literacy
- ◆ Evaluate the impact of communications on an ongoing basis.
- ◆ Advance the public's env health literacy.

*Forgive me for writing such a long letter.
I did not have the time to write a shorter
one.*

(Pascal)

