

Specific Causation: The Defense Perspective

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In 1969 Clarence Borel, Dying of Mesothelioma, Started it All

“...it is impossible ...to determine with absolute certainty which particular exposure to asbestos dust resulted in injury...”

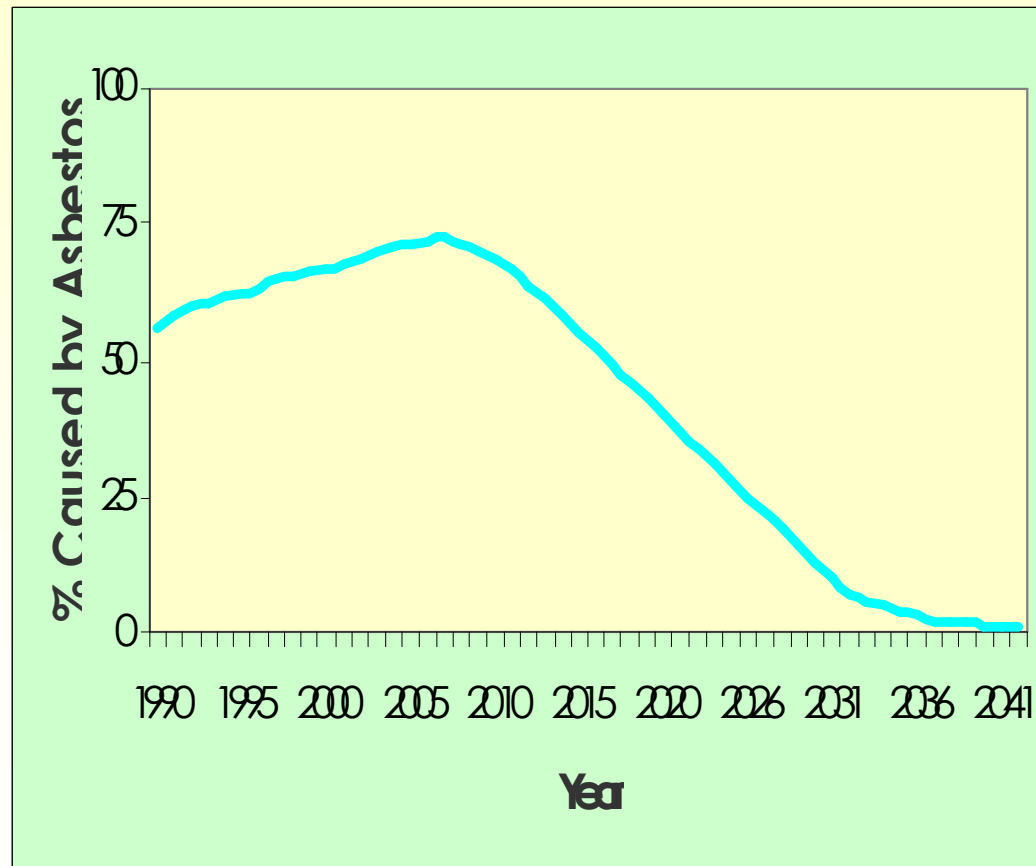
“...each exposure may result in an additional and separate injury.... [t]herefore ... the jury could find that each defendant was the cause in fact of some injury...”

From the 5th Circuit's opinion affirming judgment for Clarence Borel

Dose Response

Understanding Why Risk and
Specific Causation are Two
Different Things

Mesothelioma Won't be a Signal Tumor Much Longer



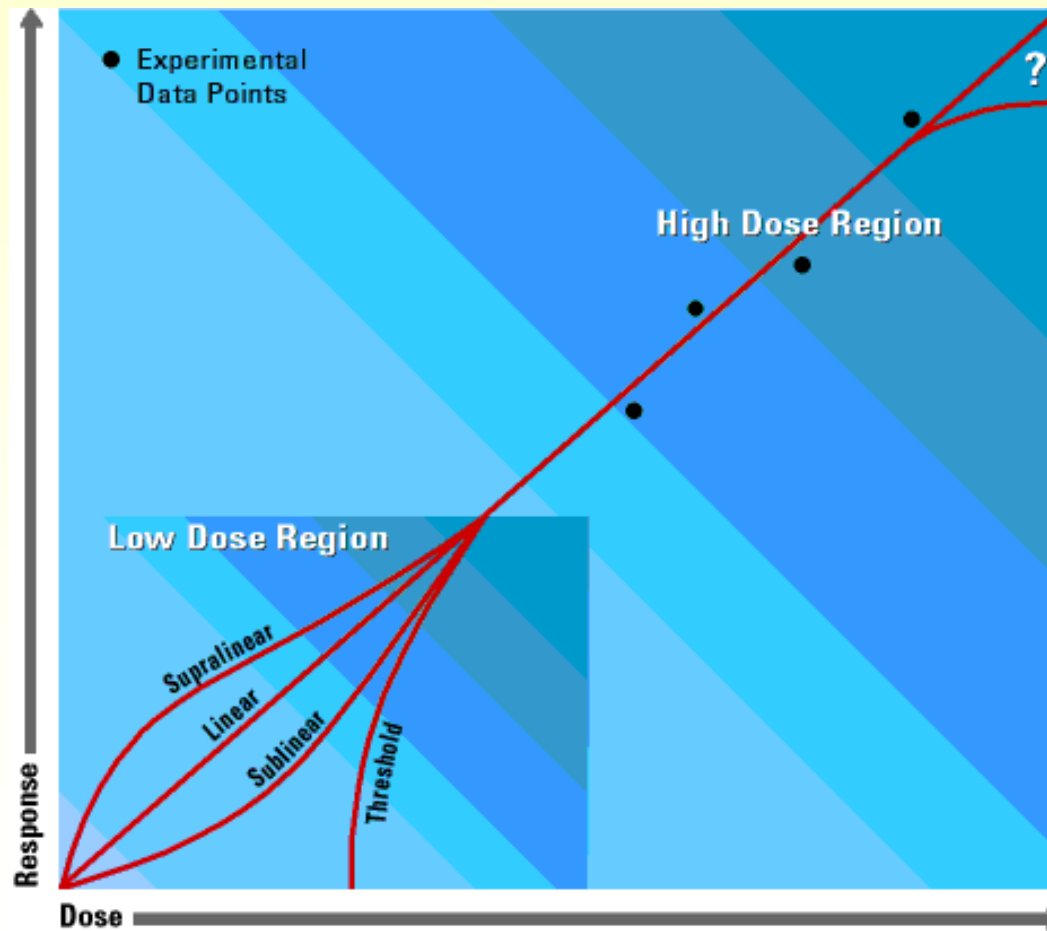
Causation

“We may define a cause to be an object followed by another and where all the objects, similar to the first, are followed by objects similar to the second. Or, in other words, if the first object had not been the second never had existed.”

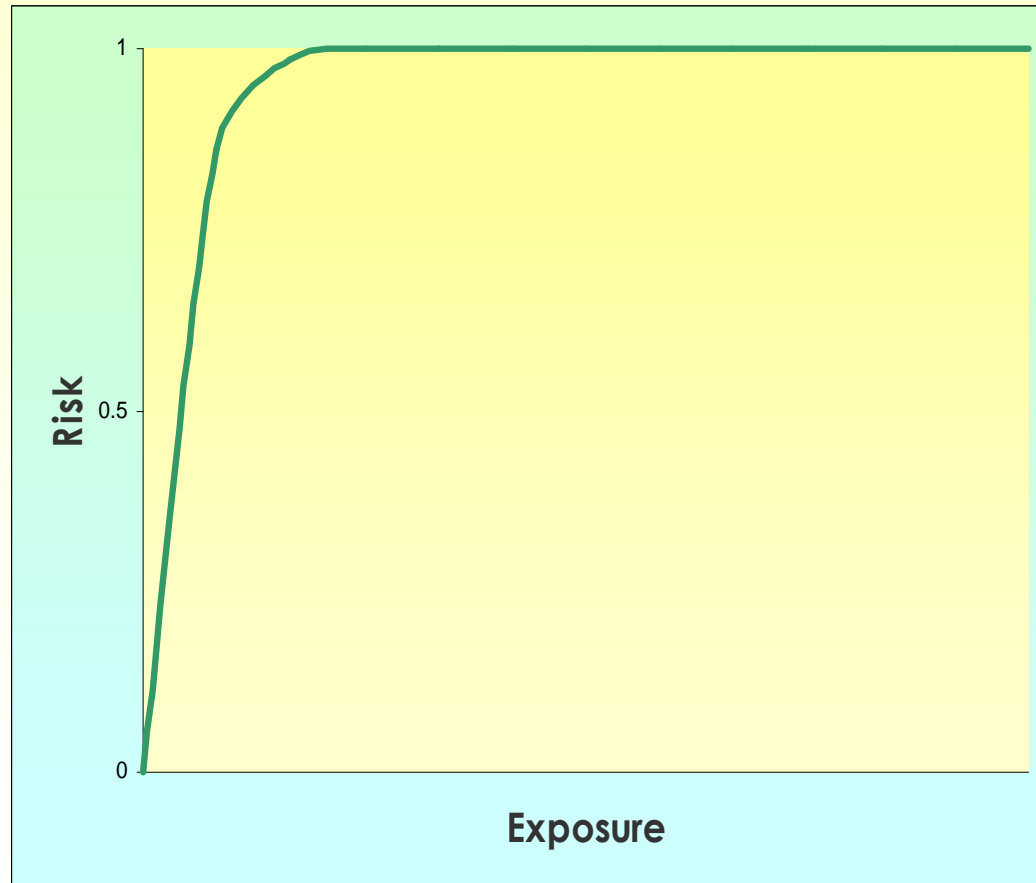
"An Enquiry Concerning Human Understanding"

David Hume (1748)

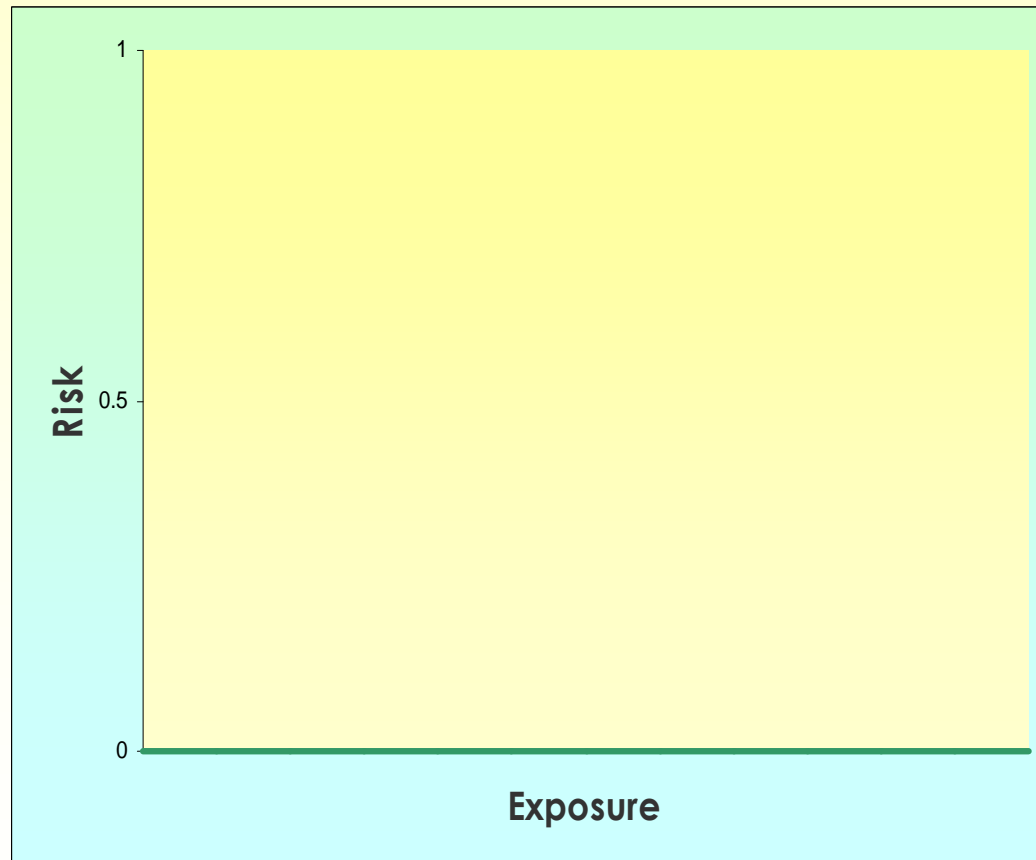
Estimating Risk



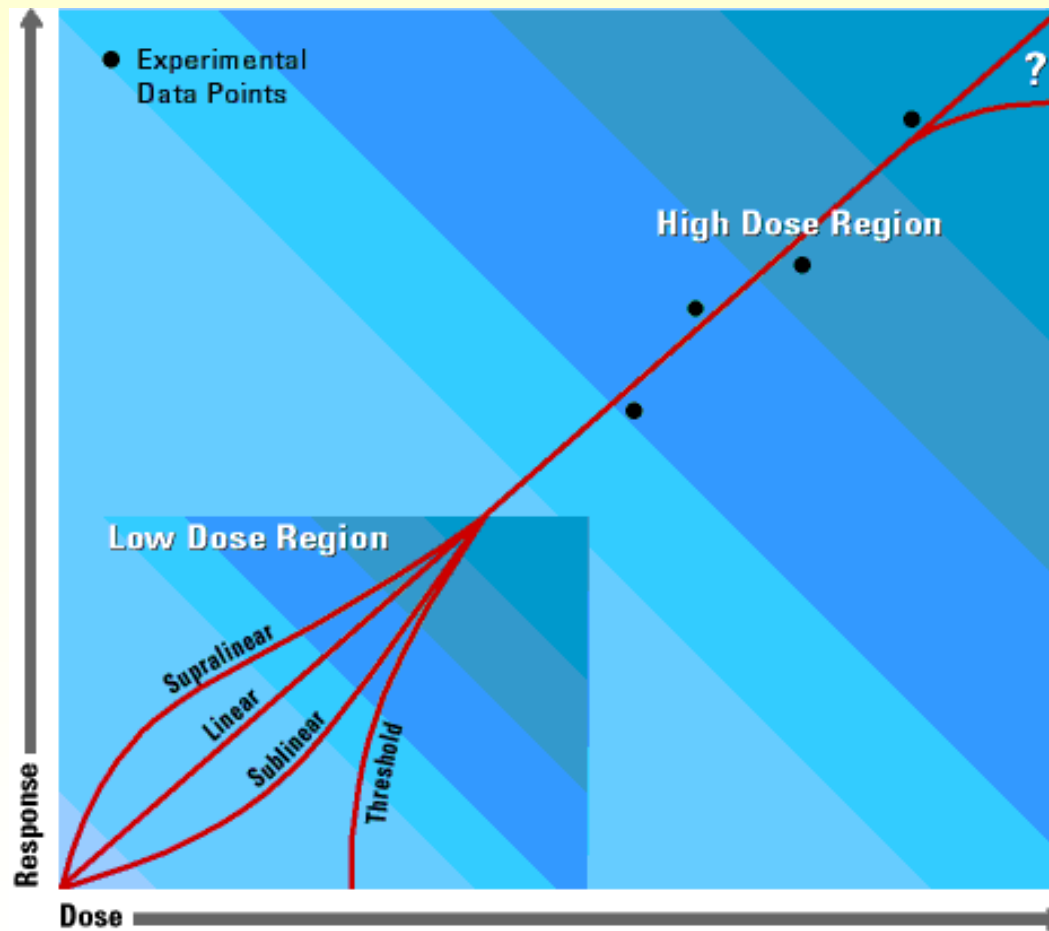
Dose Response if Risk is 1.0



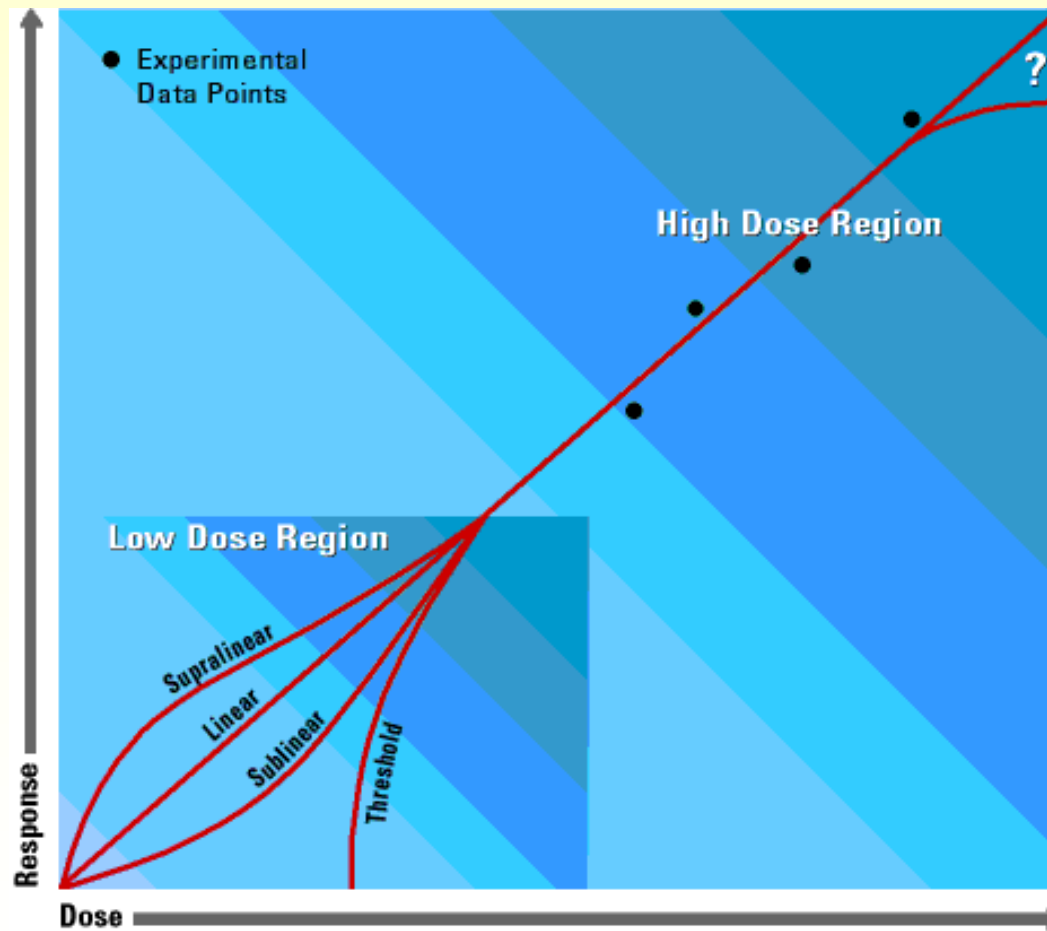
Dose Response if Risk is 0



Typical Dose Response Curve



The Origin of “No Safe Level”



The Problem with “No Safe Level”

There is no evidence that these levels of exposure pose a risk to anyone

EPA's linear model lack[s] adequate scientific support

National Academy of Sciences – 2006

Where Did “Specific Causation” Come From?

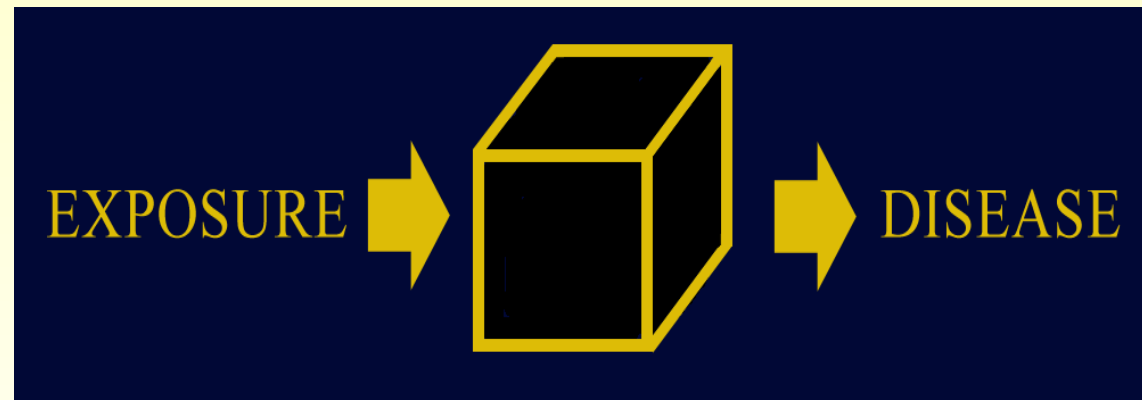
Causal Inference:
From Smokers to Smoker

1964 – The Rise of Black Box Epidemiology

Without the tools necessary to see what was going on inside cancer cells a method for inferring causation was needed.

Epidemiology seemed to meet that need when, in 1964, A. Bradford Hill, using statistics and a list of causal criteria, demonstrated that smoking caused lung cancer in smokers.

A Paradigm for Public Health

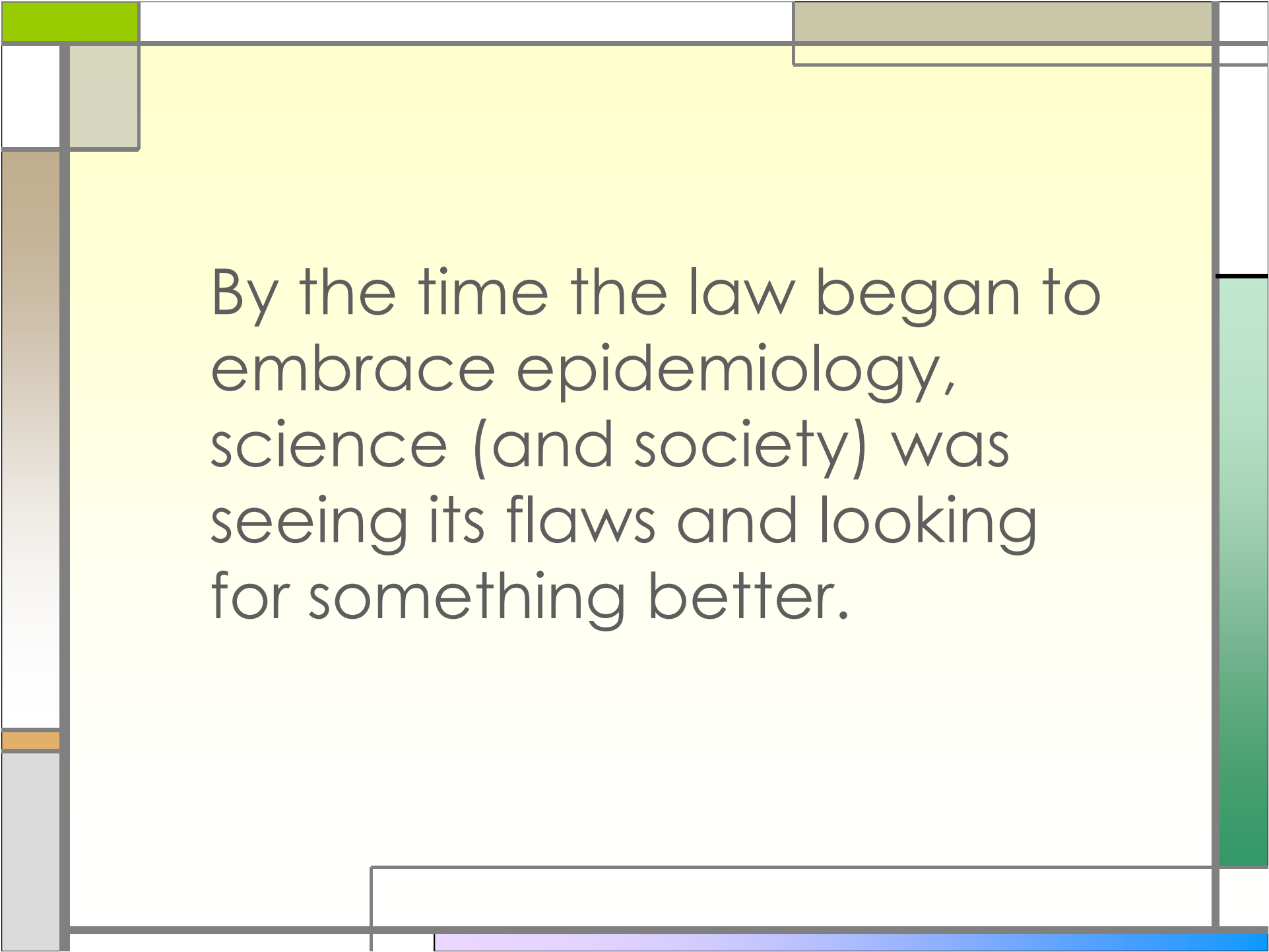


The belief arose that it wasn't necessary to know what was going on inside the body (the black box) in order to determine the cause of cancer.

1994 – Black Box Epidemiology Reaches its Zenith

Lawyers argue and some courts agree that epidemiology is required to prove causation in toxic tort cases.

Splitting causation into “general” and “specific” causation the debate moved on to the question of whether epidemiology could shed light on an individual case.



By the time the law began to embrace epidemiology, science (and society) was seeing its flaws and looking for something better.

“Black Box Epidemiology is Not Science”

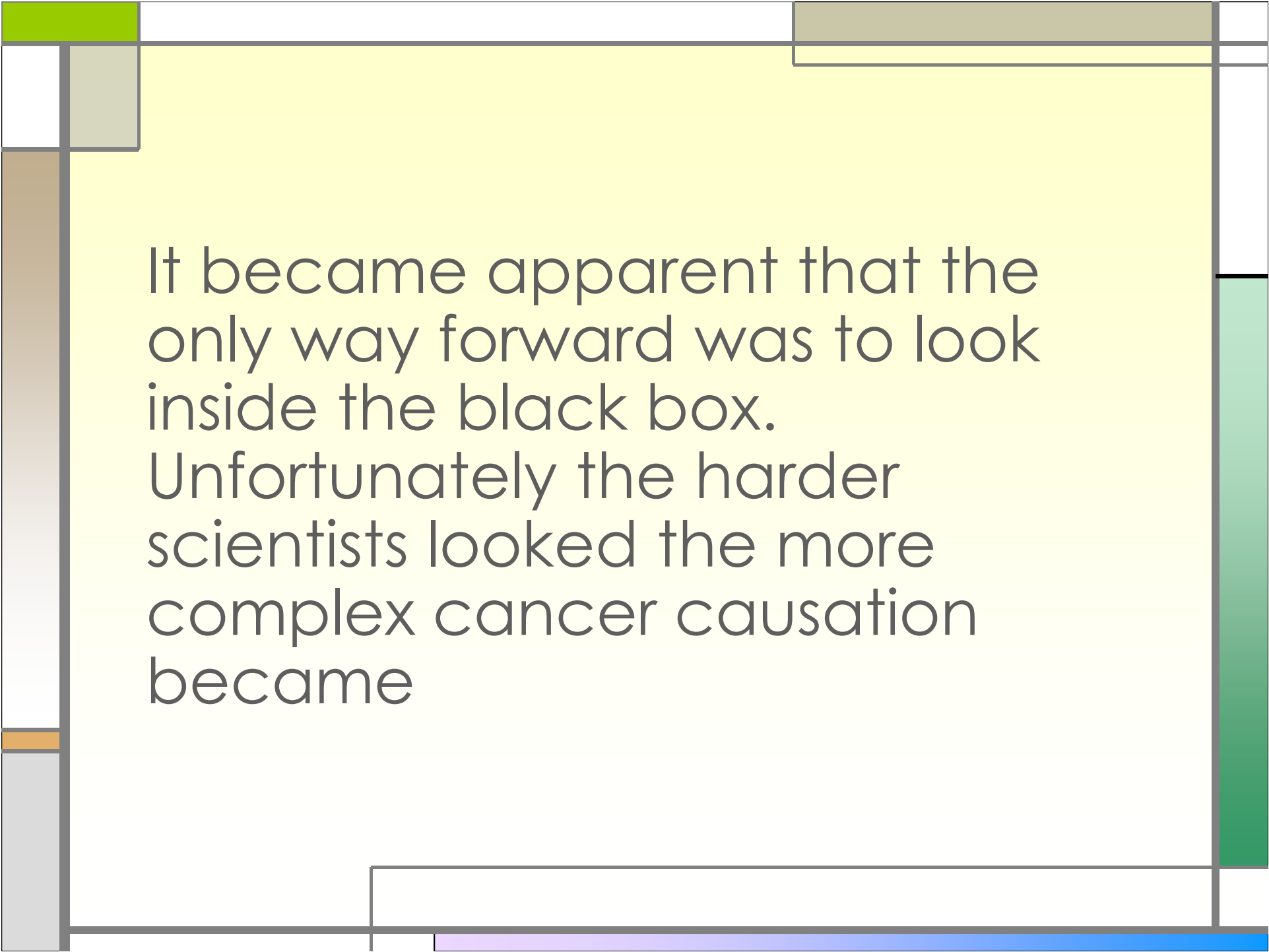
“Risk factor epidemiology is an ancillary methodology, which, if governed by rigorous scientific principles, may provide testable hypotheses of causality. It cannot ‘contradict’ pertinent scientific data, and it ignores them only at its peril.”

– Petr Skrabanek, The Emptiness
of the Black Box. *Epidemiology*
(September 1994)

Epidemiology – Is It Time to Call It a Day?

An aspect of epidemiology which has received much criticism is the apparently indiscriminate identification of particular aspects of daily life as dangerous to health.

- George Davey Smith and Shah Ebrahim
Epidemiology – is it time to call it a day? (2001)



It became apparent that the only way forward was to look inside the black box. Unfortunately the harder scientists looked the more complex cancer causation became

An Old Debate Rekindled

A. B. Hill: Smoking causes lung cancer

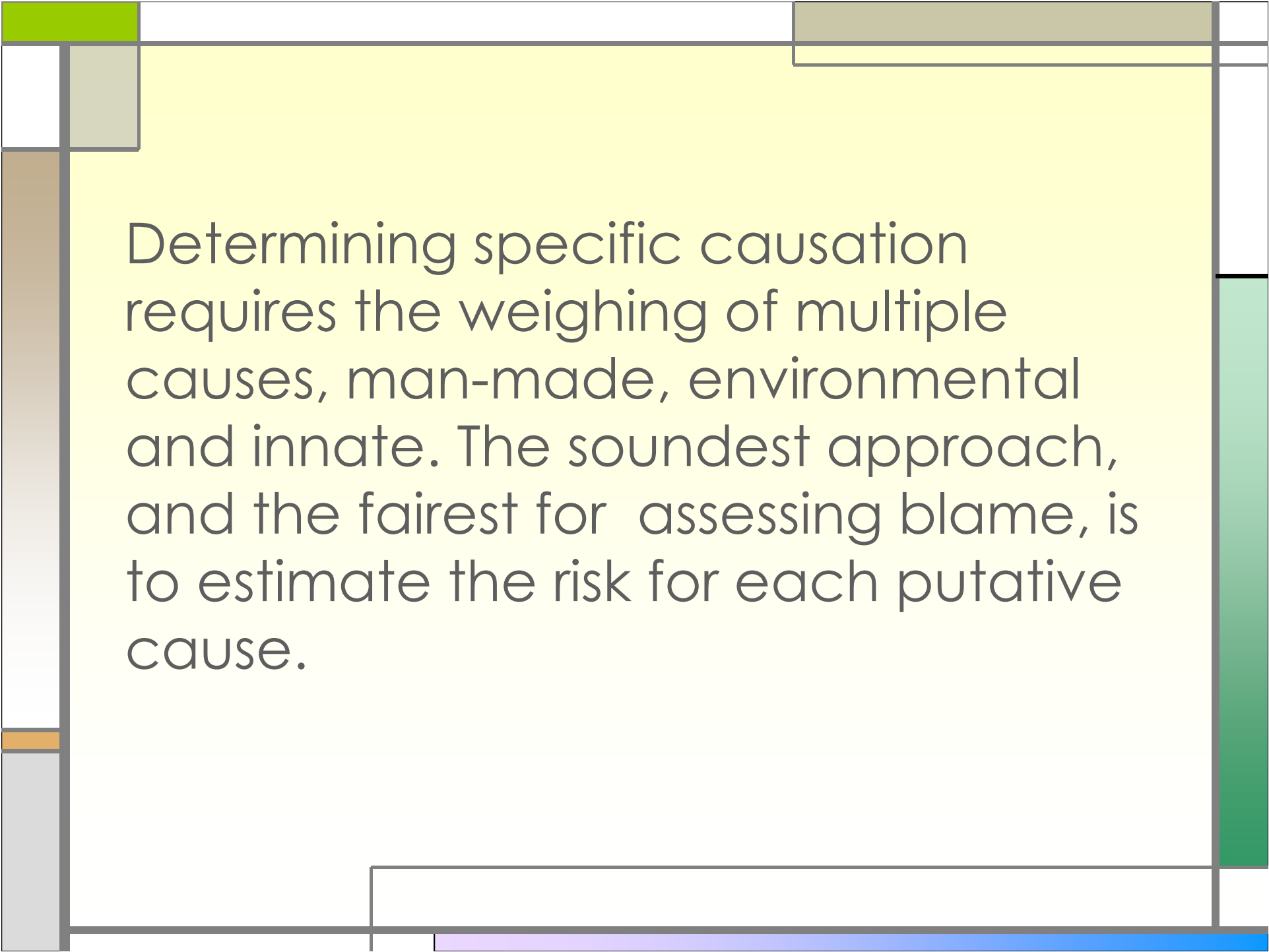
R. A. Fisher: Why not this?

smoking ← nicotine craving gene → lung cancer

Genetic Link Tied to Smoking Addiction

Washington (AP) – Scientists have pinpointed genetic variations that make people more likely to get hooked on cigarettes and more prone to develop lung cancer...

New York Times
April 2, 2008



Determining specific causation requires the weighing of multiple causes, man-made, environmental and innate. The soundest approach, and the fairest for assessing blame, is to estimate the risk for each putative cause.

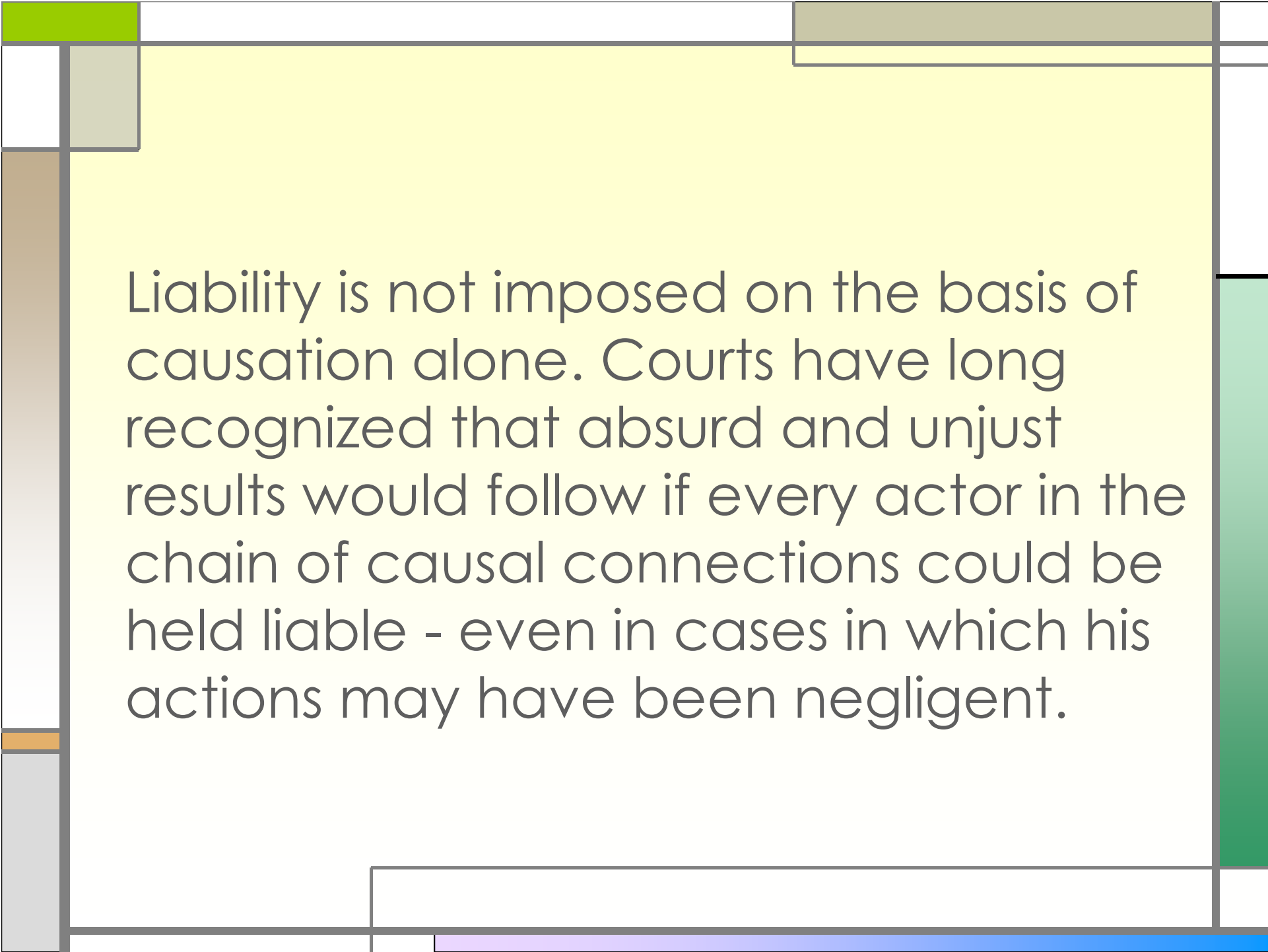
The Limits of Liability

Apportioning
fault in a
world of
inevitable
risks

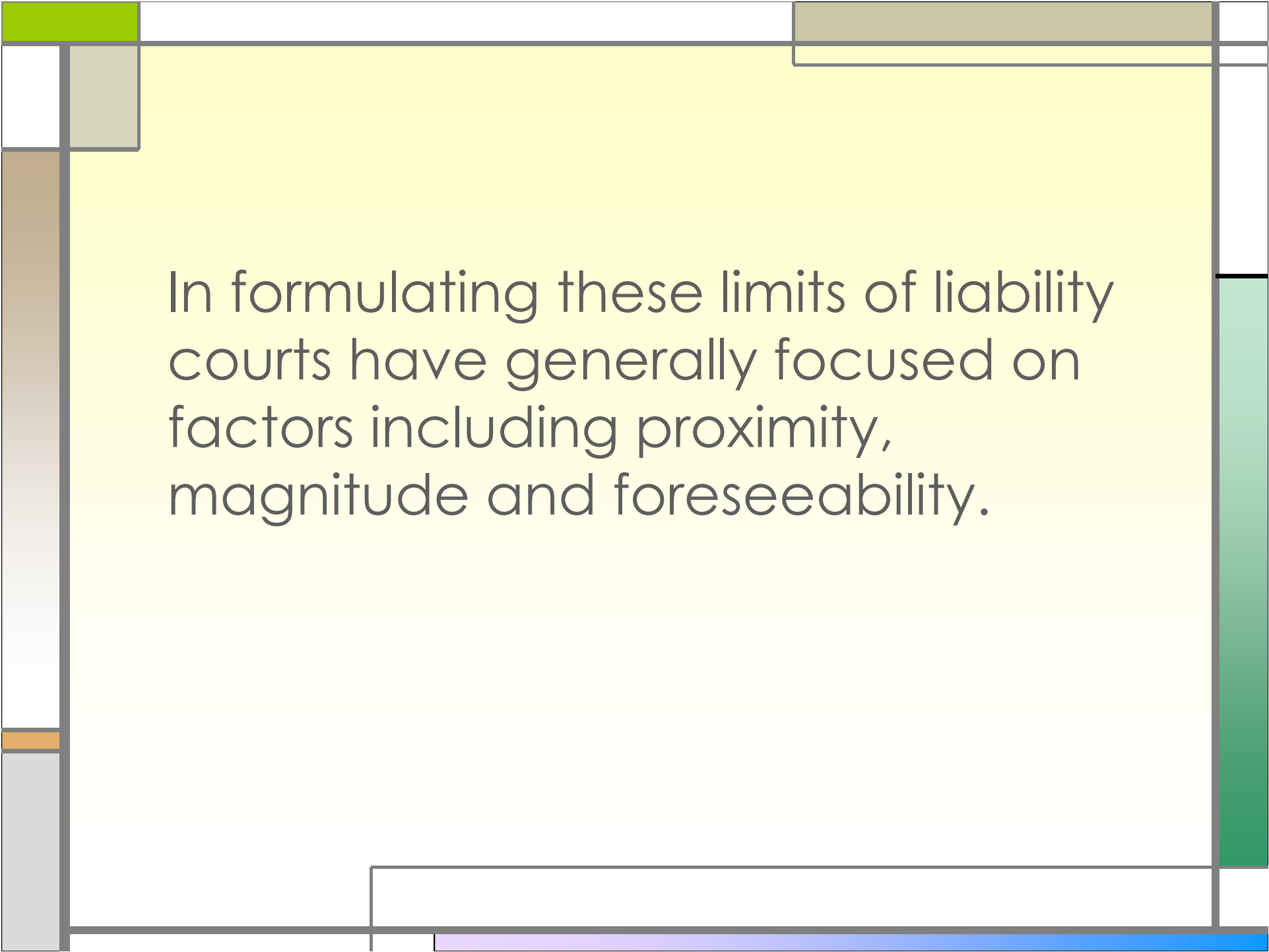


Legal Theories of Causation

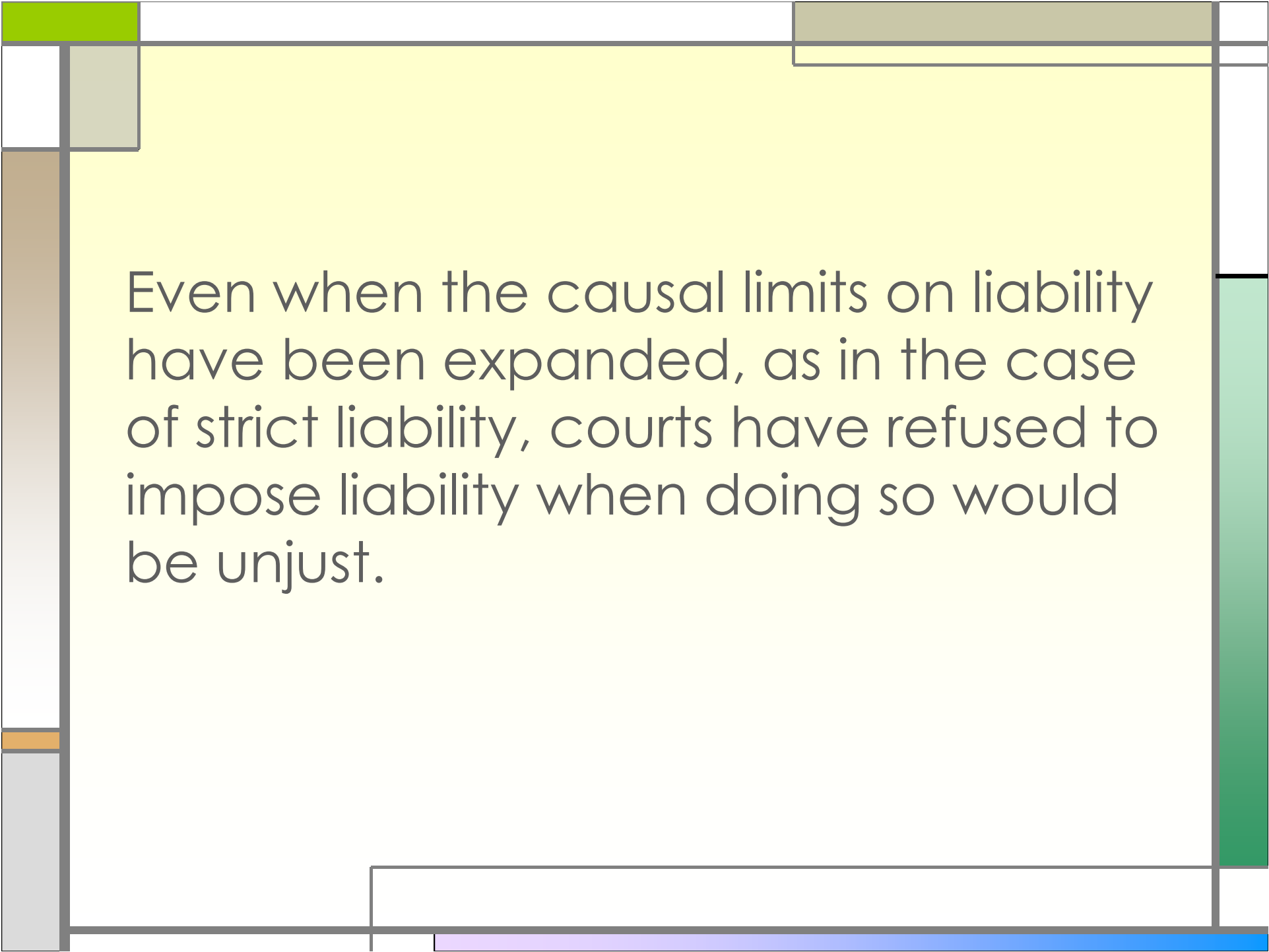
But for
Redistributive
Deterrence
Risk



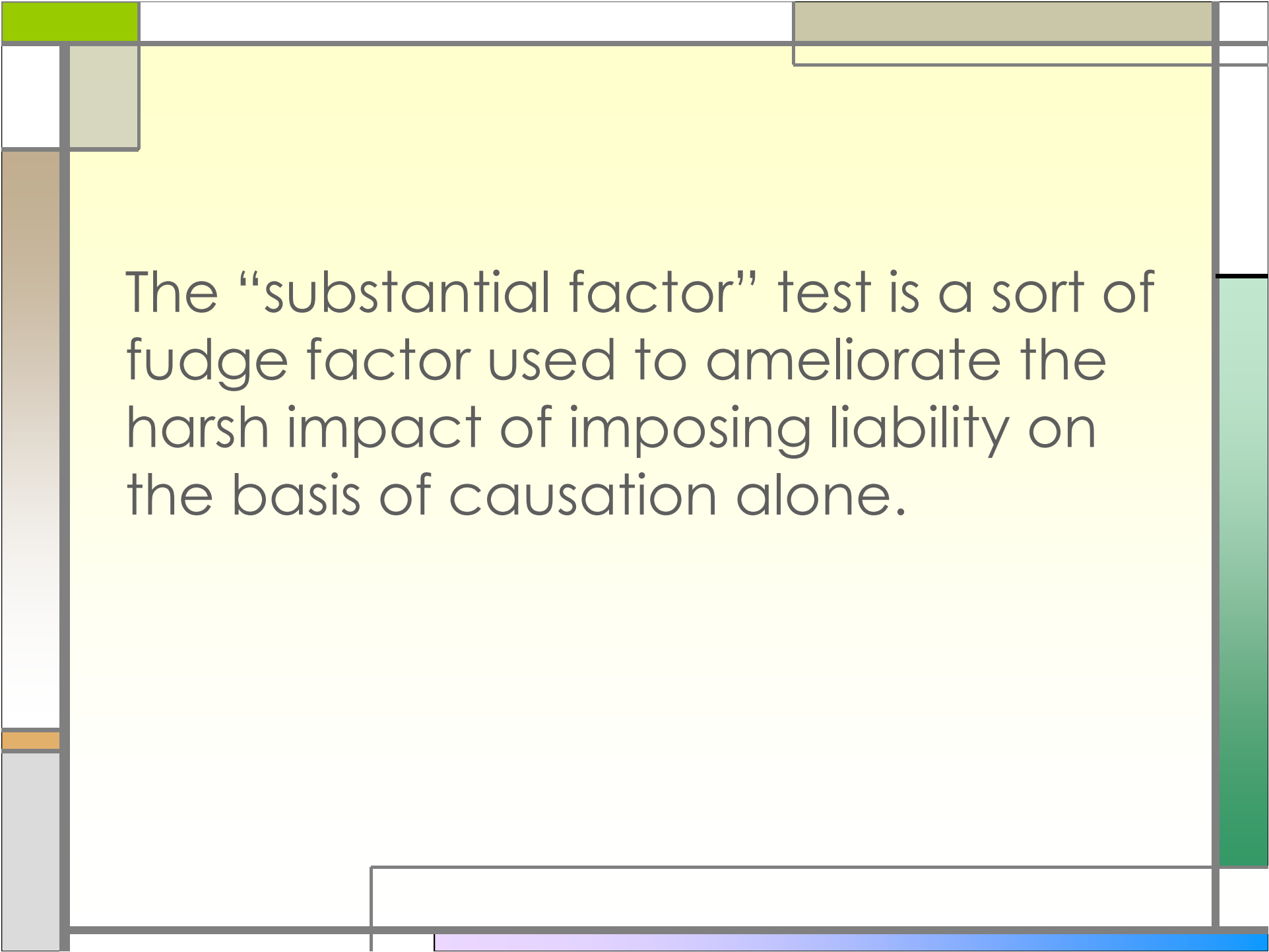
Liability is not imposed on the basis of causation alone. Courts have long recognized that absurd and unjust results would follow if every actor in the chain of causal connections could be held liable - even in cases in which his actions may have been negligent.



In formulating these limits of liability courts have generally focused on factors including proximity, magnitude and foreseeability.



Even when the causal limits on liability have been expanded, as in the case of strict liability, courts have refused to impose liability when doing so would be unjust.



The “substantial factor” test is a sort of fudge factor used to ameliorate the harsh impact of imposing liability on the basis of causation alone.

A “Substantial Factor” Is Not a “Big Cause”

If it was a
necessary link then
it was as essential
as any other link in
the causal chain.



Some courts have taken a qualitative approach to risks associated with asbestos exposure. Noting that risk is proportional to exposure (dose response), they employ the “frequency, regularity and proximity test” of *Lohrmann v. Pittsburgh Corning Corp.*, 782 F.2d 1156 (4th Cir. 1986).

“As a matter of law, Corson’s affidavit does not provide a basis for a causation finding as to any particular defendant. A holding to the contrary would permit imposition of liability on the manufacturer of any product with which a worker had the briefest of encounters on a single occasion.”

Lindstrom v. A-C Product Liability Trust,
424 F.3d 488 (6th Cir. 2005)

Pennsylvania applies the “frequency, regularity and proximity” test to a mesothelioma case despite direct evidence of exposure.

Gregg v. V-J Auto Parts, Inc., No. 38 EAP 2005,
2007 WL 4557811 (Pa. Dec. 28, 2007)

“... we share judge Klein’s perspective, as expressed in the *Summers* decision, that such generalized opinions do not suffice to create a jury question in a case where exposure to the defendant’s product is *de minimus*, particularly in the absence of evidence excluding other possible sources of exposure (or in the face of evidence of substantial exposure from other sources)”

Gregg v. V-J Auto Parts, Inc., No. 38 EAP 2005,
2007 WL 4557811 (Pa. Dec. 28, 2007)

“We do not believe that it is a viable solution to indulge in a fiction that each and every exposure to asbestos, no matter how minimal in relation to other exposures, implicates a fact issue concerning substantial-factor causation in every ‘direct-evidence’ case.”

Gregg v. V-J Auto Parts, Inc., No. 38 EAP 2005,
2007 WL 4557811 (Pa. Dec. 28, 2007)

“Just because a hired expert makes a legal conclusion does not mean that a trial judge has to adopt it if it is not supported by the record and is devoid of common sense.”

Summers v. Certainteed Corp. (PA Super. Ct. 2005), 886 A.2d 240 (PA Super. Ct. 2005)

“...[s]uppose an expert said that if one took a bucket of water and dumped it in the ocean, that was a ‘substantial contributing factor’ to the size of the ocean. Dr. Gelfand’s statement saying every breath is a ‘substantial contributing factor’ is not accurate.”

Summers v. Certaineed Corp. (PA Super. Ct. 2005), 886 A.2d 240 (PA Super. Ct. 2005)

Texas Takes a Quantitative Approach

“... mere frequency, regularity, and proximity is necessary but not sufficient, as it provides none of the quantitative information necessary to support causation under Texas law.”

Borg-Warner v. Flores, 232 SW3d 765 (Tex. 2007)

“The sparse record here contains no evidence of the approximate quantum of Borg-Warner fibers to which Flores was exposed, and whether this sufficiently contributed to the aggregate dose of asbestos Flores inhaled, such that it could be considered a substantial factor in causing his asbestosis.”

Borg-Warner v. Flores, 232 SW3d 765 (Tex. 2007)

Substantial Factor

“Substantial factor” is the demarcation between the absurd and the reasonable, the unjust and the just imposition of liability.

Understanding Risk Takes a Lot of Effort

People and even some judges, though not any judge I know or have ever practiced before or will ever practice before, tend to grossly overestimate objectively low probability risks.

W. Kip Viscousi "*Jurors, Judges and the Misstatement of Risk by the Courts*" 30 *Journal of Legal Studies* 107 (2001).



Risk

We're Irrational About Risk

We overestimate small risks

We underestimate large risks

We hate uncertainty

Which job is riskier this one ...



this one ...



... or this one?



Estimating Dose to Estimate Risk

An estimation of dose permits an estimation of risk and so allows a court to determine whether the risk imparted can justly be the basis upon which liability may be imposed.



Risk

Unfortunately we're not very good at calculating risk even when we know all the numbers.

There's Always a Test

Assume the following:

- a) Only 1% of women over 50 have breast cancer
- b) The accuracy rate of mammography is 90%
- c) The false positive rate for mammograms is only 5%
- d) A woman over 50 has a positive mammogram

Question:

What are the odds that she really does have breast cancer?

Answer: _____

There's Always a Test

Assume the following:

- a) Only 1% of women over 50 have breast cancer
- b) The accuracy rate of mammography is 90%
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- d) A woman over 50 has a positive mammogram

Question:

What are the odds that she really does have breast cancer?

Answer: **15%**

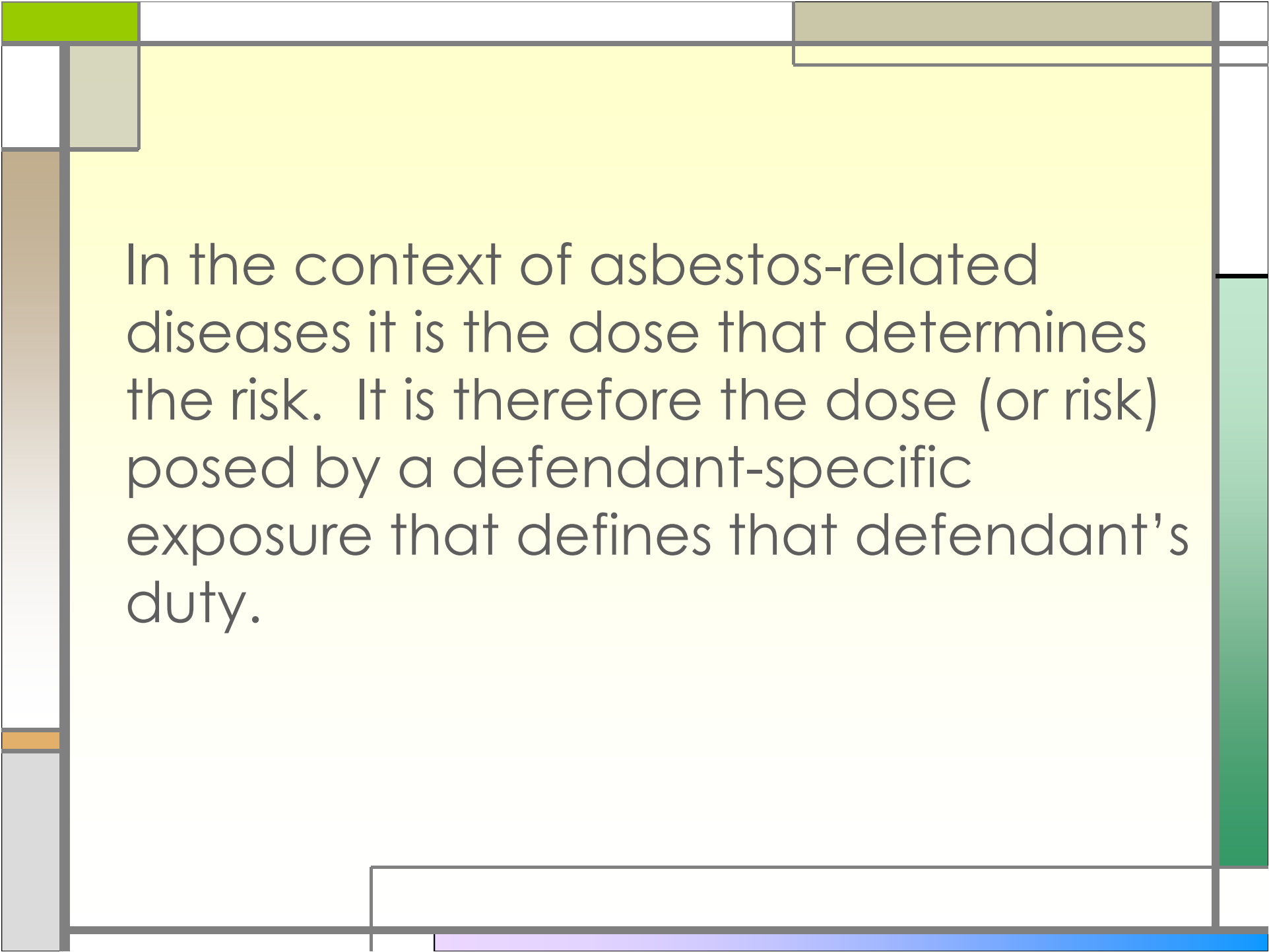
“The risk reasonably to be perceived defines the duty to be obeyed... .”

Palsgraf v. Long Island Railroad Co.,
162 N.E. 99 (N.Y. 1928)

Courts Tend to Get Risk Right

Dropping a wooden board into the hold of a ship would pose only the slightest risk of calamity. The fact that the board, upon landing, triggered a chain reaction that eventually caused the whole ship to explode does not change the fact that the risk associated with the act was vanishingly small.

In re Polemis, [1921] 3 K.B. 560



In the context of asbestos-related diseases it is the dose that determines the risk. It is therefore the dose (or risk) posed by a defendant-specific exposure that defines that defendant's duty.

“Guesstimation” or The Soundest Approach to Decision Making?

Inferring causation from elevated risk

*Industrial Union Department, AFL-CIO
v. API* 100 S.Ct. 2844 (1980)

We're all Bayesians now

*Using Probabilistic Methods to Enhance the Role of Risk
Analysis in Decision-Making with Case Study Examples*
EPA Draft for Public Comment (August 18, 2009)

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