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# Using Discourse Analysis to Study the Decline of DDT

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# Institutions & deinstitutionalization

- Institutions are “historical accretions of past practices and understandings that set conditions on action” through the way in which they acquire “status of taken for granted facts which, in turn, shape future interactions and negotiations” (Barley & Tolbert, 1997: 99)
- Deinstitutionalization occurs when previously widespread and taken-for-granted practices are abandoned, not “merely because better options present themselves” (Ahmadjian & Robinson, 2001: 627), but because practices have lost their original meaning

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# Discourse

- Discourses are collections of interrelated texts and practices “that systematically form the objects of which they speak” (Foucault, 1979:49).
- Discourses “do not just describe things; they do things” (Potter & Wetherell, 1987: 6)
  - Delimit subject positions that “warrant voice” (Potter & Wetherell, 1987)
  - Provide “a language for talking about a topic and ... a particular kind of knowledge about a topic” (du Gay 1996: 43).
  - Define “who and what is ‘normal’, standard and acceptable” (Merilänn, Tienari, Thomas & Davies, 2004: 544).

# Discourse and institutions

- “Institutions are not just social constructions but social constructions constituted through discourse (Phillips et al., 2004: 638)
- Discourse produces the shared meanings that constitute institutions through:
  - Subject positions that “warrant voice”
  - Producing a particular kind of knowledge about a topic”
  - Defining “who and what is ‘normal’, standard and acceptable”
- Texts build/dismantle organizations

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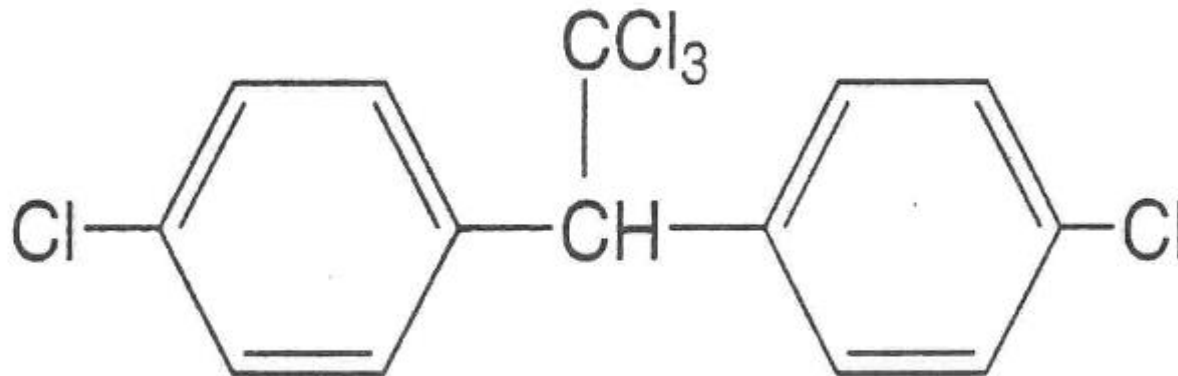
# Studying discourse

- Discourses are embodied and enacted in bodies of interrelated texts, although they exist beyond the individual texts that compose them
- Discourse analysis examines:
  - The production, distribution and consumption of interrelated texts
  - The meanings that these bodies of texts construct

**Empirical site: DDT**

**Dichloro-Diphenyl-Trichloro-ethane)**

**DDT**



1,1,1-trichloro-2,2-bis(*p*-chlorophenyl)ethane





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# The rise of DDT

- 1874** Othman Zeidler synthesizes DDT
- 1939** Paul Muller (Geigy) discovers DDT's insecticidal properties
- 1943** DDT used in WWII against typhus epidemic
- 1946** USDA recommends DDT for agricultural use
- 1948** Paul Muller receives Nobel prize
- 1950s** It becomes 'normal' to use DDT against whatever walks, crawls or flies

- DDT: top selling pesticide in the US in 1962 – the discourse was that it was safe, effective & necessary
- Within 10 years, DDT had been voluntarily abandoned by two thirds of users and was banned in 1972



# The fall of DDT: 1962-72

- 1950s**      **Claims of a range of problems accumulate in scientific/government texts**
- 1962**        **Rachel Carson publishes *Silent Spring***
- 1960s**        **Flurry of talk about DDT in scientific, public and political arenas**
- 1970**        **EPA created and assumes responsibility for pesticide registrations (from USDA)**
- 1971**        **EPA hearings on DDT**
- 1972**        **EPA ban on DDT**

# Discourse analysis and DDT

- Deinstitutionalization means that taken-for-granted meanings regarding DDT are changing
- The discourse about DDT changes during this period
- Texts play an important role, especially *Silent Spring*
- It problematizes the discourse i.e., DDT is NOT safe, effective and necessary

"The cornerstone of the new environmentalism . . .  
well-crafted, fearless, and succinct" — Peter Matthiessen

# SILENT SPRING

40TH ANNIVERSARY EDITION

RACHEL  
CARSON

with essays by Terry Tempest Williams and Linda Lear

# Problematizations in *Silent Spring*

Chapter Number and Title	Chapter Summary	Number of Citations in Scientific Chapter	
(1) "A Fable for Tomorrow"	Vision of a world poisoned by agricultural chemicals.	0	Apocalyptic vision
(2) "The Obligation to Endure"	Overview of themes and arguments.	4	Overview of arguments
(3) "Elixirs of Death"	Introduction of DDT and other agricultural chemicals.	70	Introduction of agricultural chemicals
(4) "Surface Waters and Underground Seas"	Impacts on ground and surface waters, aquatic life.	17	Negative impacts on nonhuman species
(5) "Realms of the Soil"	Impacts on soil and soil organisms.	17	
(6) "Earth's Green Mantle"	Impacts on plants and vegetation.	42	
(7) "Needless Havoc"	Impacts on wildlife, including some birds.	17	
(8) "And No Birds Sing"	Impacts on birds.	49	Safety for environment
(9) "Rivers of Death"	Impacts on fish.	41	
(10) "Indiscriminately from the Skies"	Aerial spraying campaigns.	47	Spraying and ubiquity of exposure in environment
(11) "Beyond the Dreams of the Borgias"	Residues and day-to-day exposure in the home.	14	Residues and ubiquity of exposure in home
(12) "The Human Price"	Impacts on human health.	26	Safety for humans
(13) "Through a Narrow Window"	Cell-level impacts; reproduction; mutagenicity.	59	
(14) "One in Every Four"	Cancer; carcinogenic effects of agricultural chemicals.	57	Negative impacts on humans
(15) "Nature Fights Back"	Impacts on insect predator-prey relations.	34	Problems of resurgence and secondary pests
(16) "The Rumbblings of an Avalanche"	Impacts on genetics of target species populations.	32	Problems of resistance
(17) "The Other Road"	Successful biological alternatives.	60	Problematization of <i>necessity</i>

Problematization of *safety*

Problematization of *efficacy*

Problematization of *necessity*

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## *Bodies* of texts

- It takes more than one text to bring about change
- To bring about change, a text has to be “taken up” in other texts
- Countless other texts were involved in the deinstitutionalization of DDT
- We therefore examined a range of other texts to see whether, where and how the problematizations in *Silent Spring* ‘travelled’ and whether they were ‘translated’

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# Institutional Pillars

- Institutionalized practices are held in place by three 'institutional pillars' (Scott, 2001)
  - Cognitive
  - Normative
  - Regulative/coercive
- Deinstitutionalization implies that the three pillars are undermined
- So we examined a range of other texts associated with the institutional pillars
  - Scientific texts
  - Public letters, media, government reports
  - Legal texts



# Cross-sectional analysis

- Did the discourse of DDT change between 1960-72 and, if so, how?
- Could changes be linked to problematizations in Silent Spring?
- Compared texts 1962-1972, coding for whether/how texts constructed DDT as safe, effective and necessary.
  - Cognitive pillar: science textbooks in 1962 and 1972
  - Normative pillar: NYT editorials in 1962 and 1972
  - Regulative pillar: federal legislation in 1962 and 1972

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# Longitudinal analysis

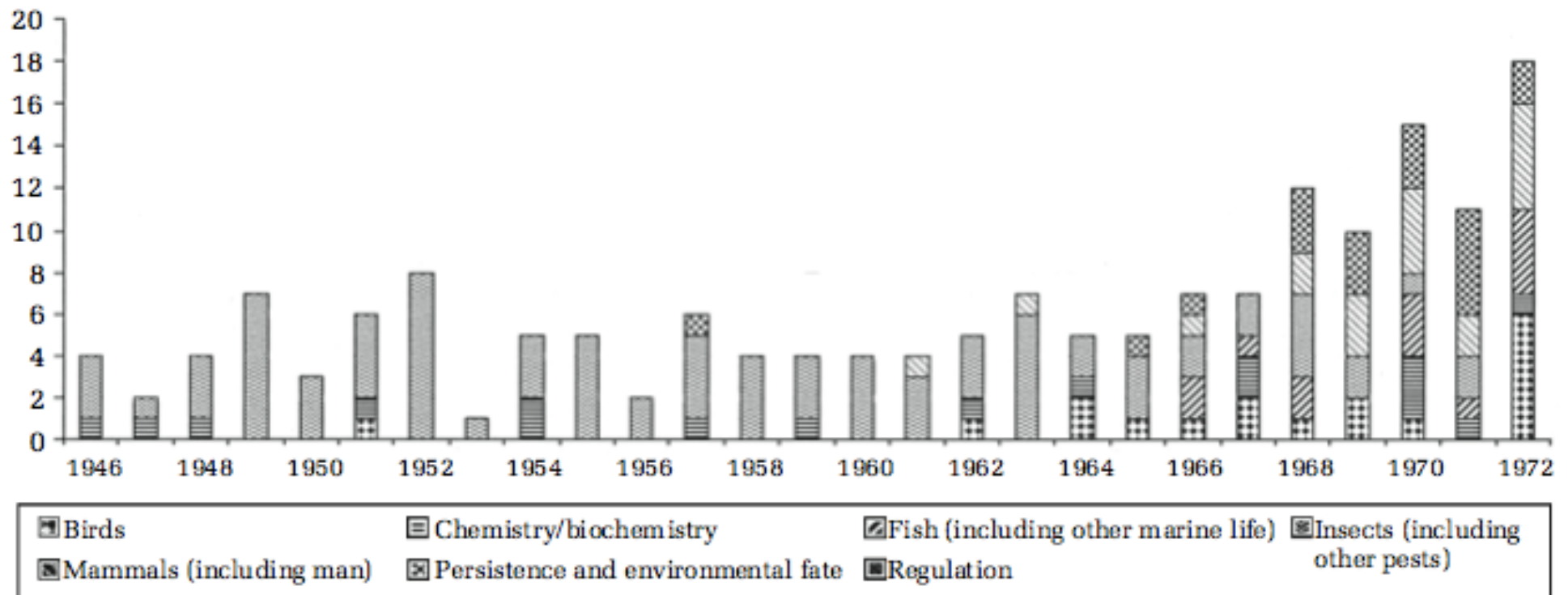
- Were there changes in patterns of production, distribution, consumption of texts about DDT over time i.e., before and after *Silent Spring*?
  - Cognitive pillar: PhD dissertations: articles in *Science*
  - Normative pillar: NYT editorials; government reports
  - Regulative pillar: federal regulations, administrative rulings

# The cognitive pillar

- Following *Silent Spring*, more scientific texts were produced about DDT
- New kinds of author
  - Biologists, ecologists (interested in DDT's impacts on birds, fish, wildlife and humans) rather than entomologists (effectiveness of DDT)
- New subject positions emerge
  - Scientific disciplines more focused on safety of DDT – eco-toxicology and ecology
- The body of knowledge changes
  - The problematization of DDT's safety for the environment becomes normalized

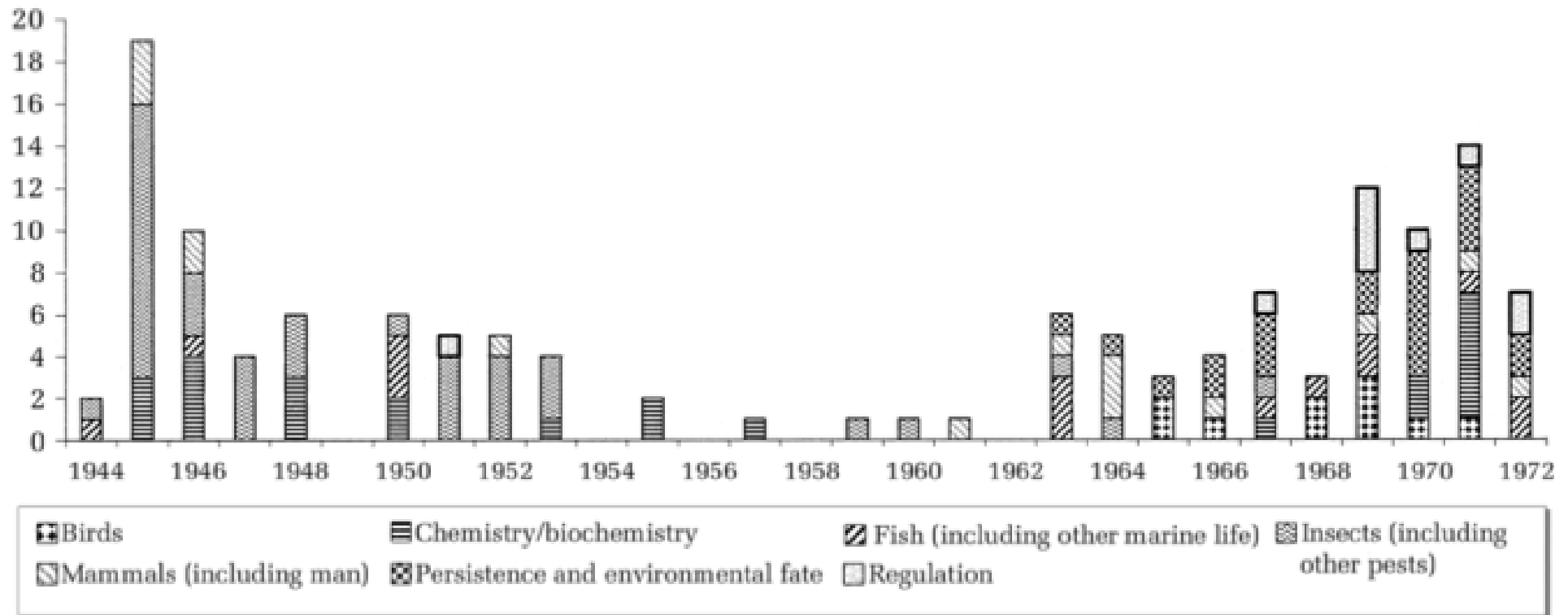
# Shifting patterns in production of scientific texts on DDT

Number of Doctoral Dissertations on DDT, by Topic, by Year



# Shifting patterns in production of scientific texts on DDT

Number of Articles on DDT in *Science*, by Topic, by Year



# The cognitive pillar

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# The normative pillar

- Following Silent Spring, more public texts were produced about DDT; with new types of authors
  - Letters to Rachel Carson
- Content of texts changes
  - Letters, and editorials, government and NGO reports label practices of DDT use as inappropriate
- New subject positions emerge
  - Public
  - Environmental NGOs and politicians
- The body of knowledge changes
  - Problematization of environmental safety is normalized
  - Problematization human safety is qualified
  - Problematization of necessity is subverted

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# The regulative pillar

- Authorship of legal texts changes
  - Formal authority is redistributed in the field
- Content changes
  - addresses DDT's impacts and appropriateness and, ultimately, categorize practices as illegal
- New subject positions
  - EPA: For the first time, a single agency responsible for public, environment and farmers in regulating pesticides
- The body of knowledge changes
  - Problematization of environmental safety is normalized
  - Problematization human safety is qualified
  - Problematization of necessity is subverted



# Translations

- *Silent Spring* problematizes DDT discourse
  - Not safe, effective or necessary
- These meanings are taken up – they travel
- As they travel, they are translated
  - Problematization of environmental safety: normalized
  - Problematization of human safety: qualified
  - Problematization of efficacy: minimized
  - Problematization of necessity: subverted
    - DDT is not substituted by biological controls as advocated in *Silent Spring*
    - DDT is substituted by other chemical controls

# Counter-texts

- “Concern over the impact of pesticides ... has been exaggerated out of all proportion to actual facts.”
- “There is no valid evidence that, when applied by approved methods, DDT has injured any human being or ... animal.”
- “DDT is known to be a useful, safe, effective, economical and thoroughly researched pesticide.”
- “It is ridiculous to summon and collate inaccurate, exaggerated emotional and essentially irrelevant evidence to ban the correct, safe, and scientifically established uses of [DDT] when the overwhelming facts dictate that our food supply, our health and ... our living standards would clearly be threatened

# Conclusion: deinstitutionalization

- Practices are abandoned when the discourse about practices changes in ways that undermine the institutional pillars
- The discourse changes as a result of
  - Problematizations that are taken up in other texts and survive translation
  - New subject positions, from which actors speak and act in support of problematizations
  - New bodies of knowledge which serve to normalize problematizations
- Disruptive & defensive discursive work occur during deinstitutionalization

# Conclusion: discourse analysis as a method

- Discourses hold institutionalized practices in place
- Changing an institution requires talking about it in new ways in bodies of texts
- New meanings have to travel i.e., be taken up in other texts
- Meanings will be translated as they travel
- Discourse scholars therefore need to examine:
  - Meanings in individual texts
  - Changes in meaning as they travel
  - Patterns in practices of texts production, distribution and consumption

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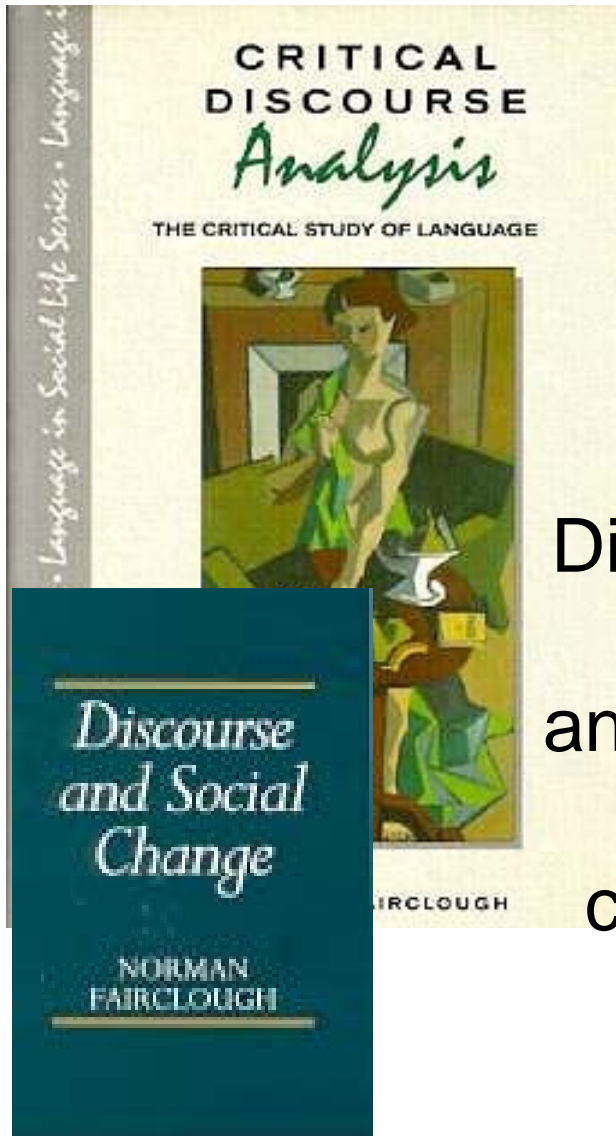
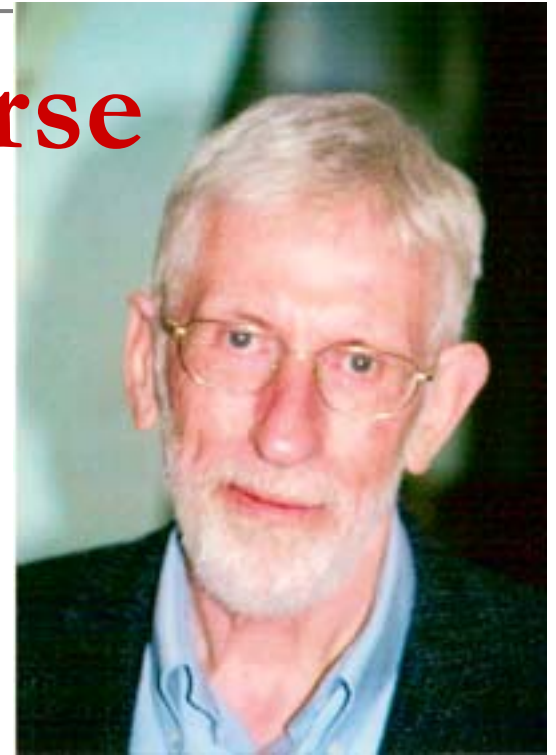
# Questions & Discussion

# Criticisms of discourse analysis as a method

- The “descent into discourse” has resulted in “the loss of a sense of ‘material reality’.” Discourse scholars have simply substituted positivistic determinism with a “deterministic discursism” of a linguistic kind (Conrad, 2004: 428).
- Discourse analysts argue that “everything that is real (or even important) is discursive” (Thompson & Harley, 2012: 1364).
- Discourse researchers are uninterested in “practices, meanings, relations, [and] materiality beyond and beneath discourse” (Alvesson & Kärreman, 2011: 1125).

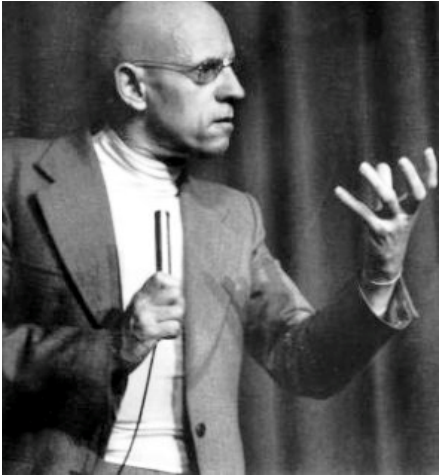


# Fairclough and discourse



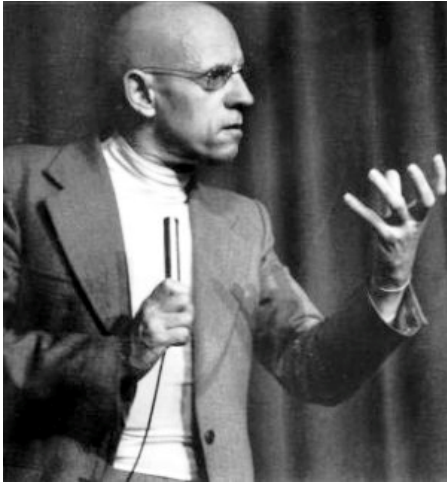
Discourse analysis involves “the analysis of (spoken or written) language texts, analysis of discourse practice (processes of text production, distribution and consumption) and analysis of discursive events as instances of sociocultural practice”





# Foucault and discourse

- Discourses are collections of interrelated texts and practices “that systematically form the objects of which they speak” (Foucault, 1979: 49).
- “[Foucault] demands that one does not reduce the analysis of discourse merely to the ‘markings of a textuality’, but that one fixes it also in the physicality of its effects, in the materiality of its practices”(Hook, 2007: 125).
- Discourse as power/knowledge relations
- “Nothing is more material, physical, corporeal than the exercise of power” (Foucault, 1980: 57)



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“Extreme” social constructionism has “reduced” the study of organizations to the study of discourse and produced a “one-sided” style of thinking (Fairclough, 2005: 916, 918).

Fairclough reads Foucault “through the spectre of a linguist’s concern with textual artefacts” and ignores Foucault’s aim of developing a ‘theory of practice’ to account for “discourse, knowledge, truth, and relations of power simultaneously” (Blommaert, 2005: 241)

# 'Critical' discourse analysis

- Focuses on texts
- Defines discourse is in purely linguistic terms:
  - A “linguistically oriented way of making sense of a phenomenon or an issue” (Balogun, 2011: 768)
  - A “connected set of statements, concepts, terms and expressions which constitutes a way of talking or writing about a particular issue” (Laine & Vaara, 2007: 37)
- Study the meaning of the language ‘in’ texts
  - Not the practices of text production, distribution and consumption; or whether and how meanings circulate; or the effects

# Critical discourse analysis

- Discourse analysis
  - Is more than simply interpretive
  - Aims to show how we can only ever infer meanings or distinguish truth-claims from ‘within’ discourse
  - Aims to show transience, durability and/or translation of meanings
  - Aims to show power effects of different meanings i.e., what discourse does
- To achieve those aims, discourse scholars need to consider the “physicality of a discourse’s effects and the materiality of its practices” (Hook, 2007: 125)

# A final word

## To critics

- Discourse analysis can be used to study materiality
  - To suggest that materiality can only be 'known' through discourse is NOT to reduce everything to discourse

## To discourse analysts

- Interpretive vs. critical/constructionist
- Language vs. materiality
- If you are interested in materiality:
  - Study the production, distribution & consumption of texts or
  - Study materiality and practice more directly