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# Long-term Socioeconomic Status and the Experience of Preventable Disease: A Comparative Analysis of Fundamental Cause Theory

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# Long-term Socioeconomic Status and the Experience of Preventable Disease: A Comparative Analysis of Fundamental Cause Theory

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*Funded by SSHRC*

# Two Main Objectives:



- 1) Investigate changes in the relationship between health and SES as Canadians and Americans age.**
- 2) Examine whether social contexts related to policy and economic inequality are effective in buffering the negative health effects of low socioeconomic status.**

# Fundamental Cause Theory



- **Why do SES disparities in health persist when proximal risk factors are eliminated?**

**(Phelan et al., 2004; Phelan and Link, 2005)**

# Fundamental Cause Theory



- Resources are used in a purposeful way to influence health, regardless of risk factors
- Creates within-country health inequality
- Less competition for resources → fewer health disparities

(Phelan and Link, 1995; Phelan et al., 2004;  
Phelan and Link, 2005)

# Health Disparities: Canada & the U.S.



- Health status more polarized in U.S.
- More Americans in lowest income quintile report poor health and other health problems
- Access to care less influenced by income in Canada

# The Role of Economic Inequality



- U.S. has higher inequality than Canada
- Evidence of negative effect on health
- Differences in access to care by disadvantaged groups
- U.S. lags behind in many policy areas that affect health and well-being

# Testing Fundamental Cause Theory



- **Less preventable causes of death have a weaker association with SES than more preventable causes of death**  
**(Phelan et al. 2004)**



# Research Questions



Willson, A.E. 2009. “Fundamental Causes’ of Health Disparities: A Comparative Analysis of Canada & the U.S.” *International Sociology*, 2009, 24(1).

- Is low SES more strongly associated with the incidence of diseases for which preventability is high compared to diseases that are less preventable?
- If so, is the relationship weaker in Canada than the U.S.?

# Analysis



- **Canadian data: National Population Health Survey (1998/1999)**
  - $N = 10,747$
- **U.S. data: Panel Study of Income Dynamics (1999)**
  - $N = 9,911$
- **Sample: 25+ years old**

# Outcomes



- **High preventability disease:**
  - Cardiovascular disease
  
- **Low preventability disease:**
  - Cancer

# Variables



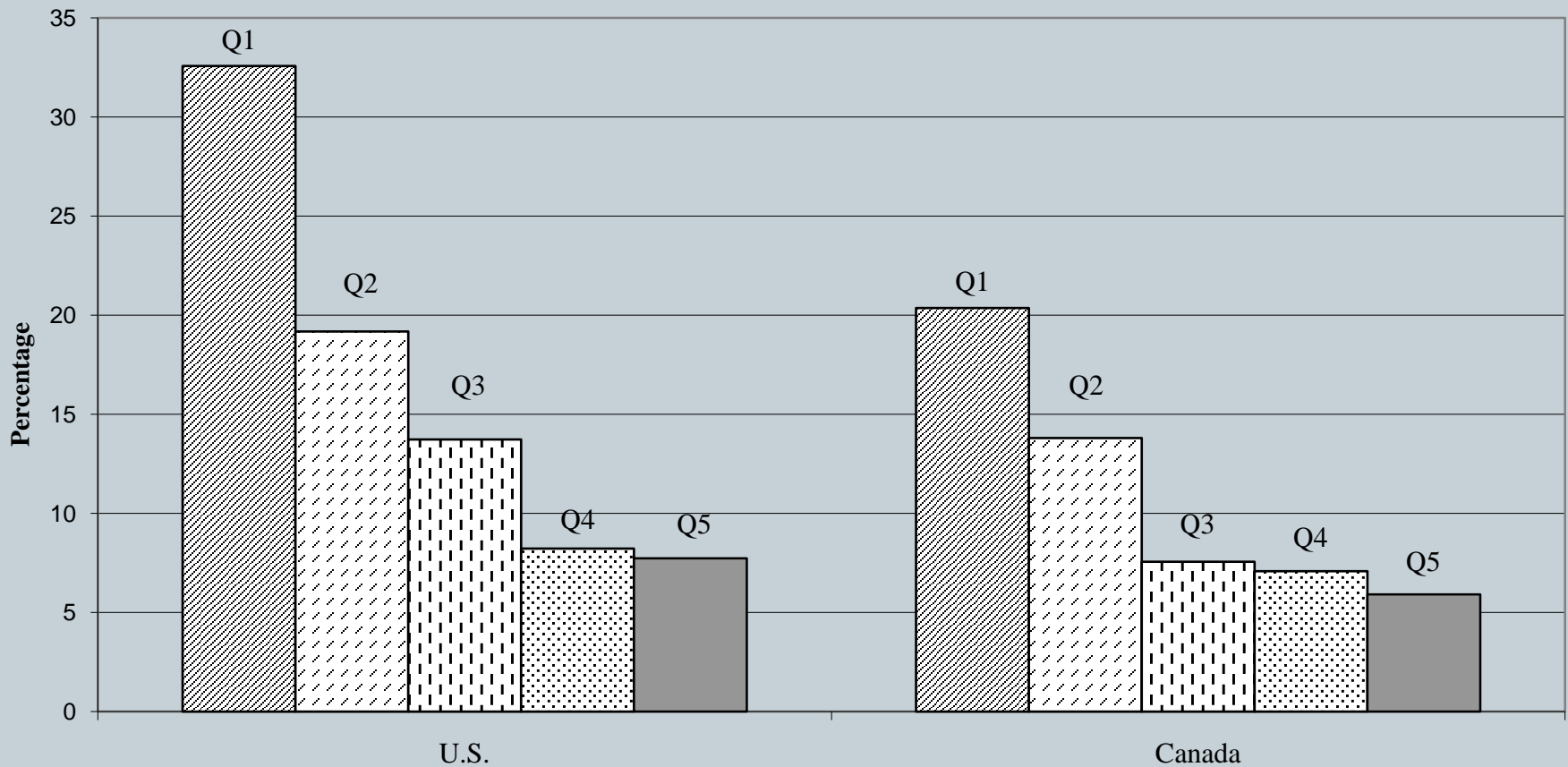
- **Independent variables**

- Education: at most a high school degree
- Household income quintile: lowest compared to all higher (adjusted for hh size)

- **Control variables**

- White (vs. nonwhite)
- Smokes
- Age (continuous)
- Male (vs. female)

# Fair/Poor Health by Household Income Quintile, U.S. & Canada, 1998-1999



# Multivariate Analysis



- **Sample: respondents reporting one of the diseases of interest**
- **NPHS: N = 807**
- **PSID: N = 971**
- **Selection bias**
  - Propensity scores

# Multivariate Analysis



- **Logistic regression**
  - Odds of experiencing cardiovascular disease vs. cancer
  - Comparison of effects in U.S. and Canada

# Multivariate Results



## U.S.

- Low educ increases odds of cardiovascular disease compared to cancer (O.R. = 1.59)
- Lowest income quintile increases the odds of cardiovascular disease compared with cancer (O.R. = 1.52)

## Canada

- Educ not significant
- Income quintile not significant



# Conclusions



- Support for fundamental cause theory in the U.S., but not Canadian, case
- Social policies and level of inequality may buffer the association between SES and the incidence of highly preventable diseases
- Canadian social policies more effective at mitigating social determinants of disease



Socioeconomic History &  
Preventable Disease:  
A Comparative Analysis of  
Fundamental Cause Theory

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# Research Questions



- Is a long-term pattern of low SES more strongly associated with highly preventable diseases compared to less preventable disease in Canada and the U.S.?
- Does the relationship occur in both Canada and the U.S. in similar magnitudes?

# Analysis



- U.S. data: Panel Study of Income Dynamics (1994-2003)
  - N = 16,617
- Canadian data: National Population Health Survey
  - N = 10,159
- Sample: 25+ years old

# Dependent Variable



- **High preventability disease:**

- Cardiovascular disease

**VS.**

- **Low preventability disease:**

- Cancer

# Variables

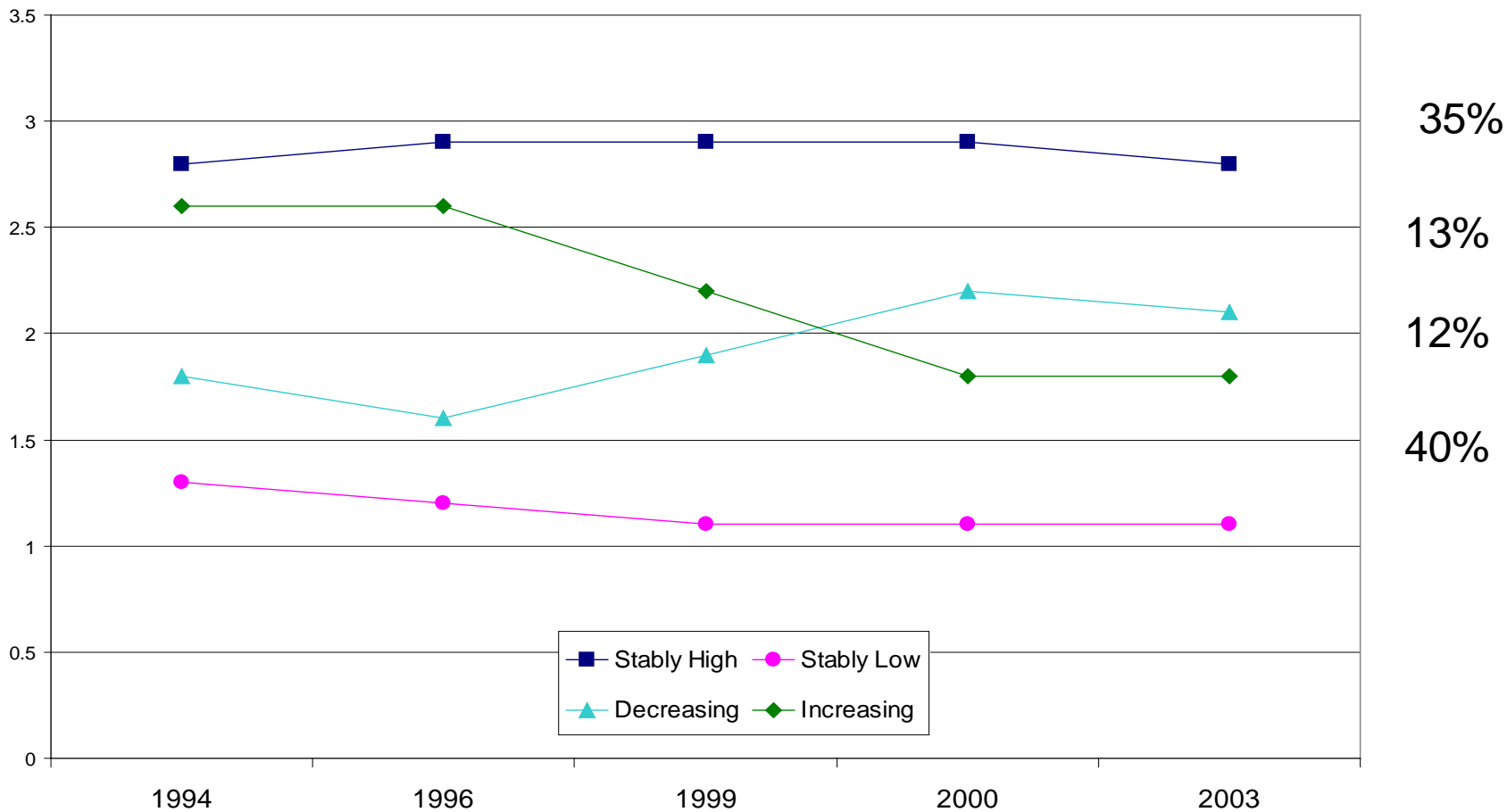


- **Independent variables**

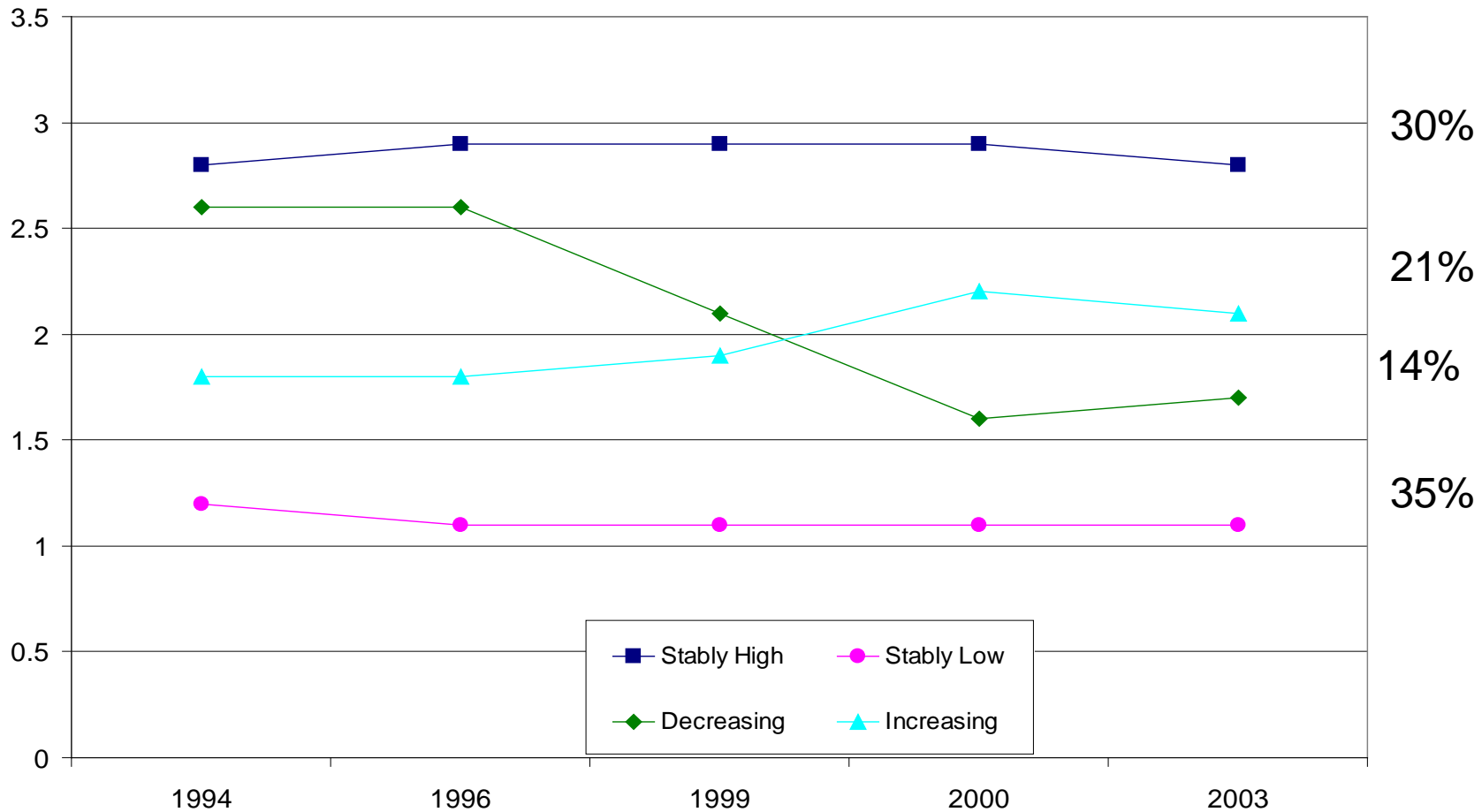
- **Income History:**

- Household income quintile measured in each cycle
- Bottom 2 and top 2 quintiles combined
  
- **Latent class analysis: Four clusters**
  - Stably high income
  - Stably low income
  - Increasing
  - Decreasing

# Income History Clusters: NPHS



# Income History Clusters: PSID





# Variables



- **Independent variables (continued)**
  - **Education**
    - < high school
    - High school
    - University

# Variables



- **Control variables**
  - White (vs. nonwhite)
  - Age
    - Young (25-44)
    - Middle (45-64)
    - Old (65+)
  - Female (vs. male)

# Variables



- **Control variables**
  - **Marital History:**
    - Marital status measured in each cycle
    - Latent class analysis:
      - Stably married
      - Never married
      - Marital transitions
  - **Smoking History**
    - Smoking measured in each cycle
    - Latent class analysis:
      - Smoker (2+ cycles)
      - Non-smoker (< 2 cycles)

# Multivariate Analysis



- **Sample: respondents reporting one of the diseases of interest**
- **NPHS:  $N = 726$**
- **PSID:  $N = 1,737$**
- **Selection Bias**

# Multivariate Analysis



- **Logistic regression (weighted)**
  - Odds of experiencing cardiovascular disease vs. cancer
  - Comparison of effects in U.S. and Canada

# Multivariate Results



## U.S.

- History of low income increases the odds of cardio vs. cancer (O.R.=1.39)
- Low educ increases the odds of cardio vs. cancer (O.R.=1.88)

## Canada

- Income history not significant
- Low educ increases the odds of cardio vs. cancer (O.R.=1.95)

# Conclusions



- **Support for fundamental cause theory**
- **Canadian social policies are more effective than U.S. in altering the social conditions related to low income that affect the determinants of disease**

# Conclusions



- **Support for fundamental cause theory**
- **Canadian social policies are more effective than U.S. in altering the social conditions related to low income that affect the determinants of disease**
- **Social policies may buffer income inequality to a greater extent than inequality in education**



# Conclusions



- **Fundamental cause theory emphasizes focus on social conditions**
- **Relationship between health disparities and economic disparities reflects policy choices**