Perception and Categorization
Paraphrasing Bruner (1957)

Every act of perception involves an act of categorization….

“The use of cues in inferring the categorial identity of a perceived object… is as much a feature of perception as the sensory stuff from which percepts are made.”

Concepts as Aspects of Semantic Memory

• Abstract, Context Free
  – Mental Lexicon
  – Generic Memory?
• Object Knowledge
• Linguistic Knowledge
• Categorical Knowledge
  – Subsets-Supersets
  – Similarity
  – Category-Attribute Relations
Social Categorization and Social Interaction
Cantor & Kihlstrom (1987)

- Categories are Equivalence Classes
  - Unite Persons, Situations, Behaviors

- Basis of Behavioral Consistency (and Inconsistency)
  - Behavioral Similarity Depends on Conceptual Similarity

Categories and Concepts
Smith & Medin (1981); Murphy (2002)

- Category
  - Partitions Real World into Equivalence Classes
    - Natural (Part of Natural World)
      - Includes Human Artifacts
    - Artificial (Contrived by Experimenter)

- Concept
  - Mental Representation of Category
    - Is the Structure of the Social World Discovered or Imposed?
    - Are Social Categories Natural or Artificial?

Labels for Social Categories

- Persons
  - Nouns

- Social Groups
  - Stereotypes, Psychiatric Diagnoses

- Situations
  - Nouns

- Actions
  - Adjectives

- Interactions
  - Labels for behavioral sequences
Ingroup vs. Outgroup: Us vs. Them
Sumner (1906, p. 12)

“The insiders in a we-group are in a relation of peace, order, law, government, and industry, to each other. Their relation to all outsiders, or others-groups, is one of war and plunder....

“Sentiments are produced to correspond. Loyalty to the group, sacrifice for it, hatred and contempt for outsiders, brotherhood within, warlikeness without – all grow together, common products of the same situation.”

The Robbers Cave Experiment
Sherif et al. (1961)

- 22 “Average” OKC 5th-Graders
  - Eagles and Rattlers
- Stage 1, Independent Activities
  - Cohesion, Hierarchy
- Stage 2, Tournament
  - Intergroup Hostility
  - Shifts in Group Leadership

35-Bean Pickup
Sherif et al. (1961)
The Robbers Cave Experiment
Sherif et al. (1961)

- 22 “Average” Ok 5th-Graders
  - Eagles and Rattlers
- Stage 1, Independent Activities
  - Cohesion, Hierarchy
- Stage 2, Tournament
  - Intergroup Hostility
  - Shifts in Group Leadership
- Stage 3, Reducing Friction
  - Noncompetitive Settings
  - Staged Crises ➔ Cooperation

Minimal Group Paradigm
Tajfel et al. (1971); Billig & Tajfel (1973)

- Arbitrary Assignment to Group
  - Artistic Preferences
  - Coin-Toss
- Group X vs. Group Y
  - Do Not Know Others in Either Group
  - No Basis for In-Group or Out-Group Stereotypes
  - No History of Group Interaction
- Distribute Rewards between Individuals
  - Maximum of 15 Points
  - Member of X vs. Member of Y

Distribution of Rewards
Tajfel et al. (1971); Billig & Tajfel (1973)
Social Identity Theory
Tajfel & Turner (1979)

- Two Sources of Self-Esteem
  - Personal Status and Accomplishments
  - Status and Accomplishments of Groups
- Boost Status of Ingroup
  - Indirectly Increase Own Status, Self-Esteem
- Basking in Reflected Glory
  - Even When Connection is Tenuous

Outgroup Homogeneity Effect
Allen & Wilder (1979)

- Pre-Experimental Measures of Attitudes
- Rate Paintings by Klee, Kandinsky
  - Assignment to Groups
    - Ostensibly Based on Painting Preference
    - Actually Random
- Survey of Attitudes and Beliefs
  - Predict Responses of Group Members
- Outgroup Homogeneity Effect
  - Increase Perceived Outgroup Similarity
  - Increase Perceived Ingroup-Outgroup Difference
Natural Categories of Persons?

After Roger Brown (1980)

- Sex (Gender)
- Kinship
- Age
- Occupation
- Nationality
- Race/Ethnicity
- Personality Types (nouns)
- Local Culture

Gender Categories

- Two Sexes
  - Male
  - Female
- Determinants
  - Chromosomal Sex (XY vs. XX)
  - Phenotypic Sex (Reproductive Anatomy)
- Intersection of Categories
  - Natural, Artificial
  - Biological, Social

The Five Sexes... And More?

Anne Fausto-Sterling, Myths of Gender (1985, 1992); Sexing the Body (2000)

- Male
- Female
- Intersex (Pseudohermaphrodites)
  - XY, Female Anatomy
  - XX, Male Anatomy
  - "Ovotestis" Gonadal Tissue
Gender Identity

- Male
- Female
- Transgendered

Gender Categories Beyond Identity

- Gender Role
  - Masculine
  - Feminine
  - Androgynous
  - Undifferentiated

- Sexual Orientation
  - Heterosexual
  - Homosexual
  - Bisexual
  - Asexual

Implications of Orthogonality 
In Gender-Related Categories

- Biological Sex Does Not Determine Gender Identity, Role, or Sexual Orientation
- Gender-Related Categories
  - 5 Biological Sexes
  - 3 Gender Identities
  - 4 Gender Roles
  - 4 Sexual Orientations

240 Gender-Related Categories
Gender Categories in UC Admissions
UC Task Force and Implementation Team
on Lesbian, Gay, Bisexual and Transgender Climate and Inclusion, 2015

- Sex Assigned at Birth
  - Male
  - Female
- Gender
  - Male, Female
  - Trans Male, Trans Female
  - Gender Queer/Gender Nonconforming
- Sexual Orientation
  - Heterosexual/Straight
  - Gay/Lesbian
  - Bisexual
  - Not Listed Above

Kinship Categories

**Nuclear Family**
- Parents
  - Mother
  - Father
- Children
  - Son
    - Brother
  - Daughter
    - Sister

**Extended Family**
- Great-Grandparents
- Grandparents
- Grandfather
- Aunts, Uncles
- Cousins
  - First, Second, Third
- Nephews, Nieces
- Grandchildren
- Great-Grandchildren

Selected Cross-Cultural Sibling Categories
Nerlove & Romney (1967)

- Type A - Sibling Only
- **Type B - Brother v. Sister**
- Type C - Elder v. Younger Brother Only
- Type H - Elder v. Younger Brothers, Sisters
- Type G - Parallel v. Cross Sex
- Type L - Parallel v. Cross, Elder v. Younger
Hopi Sibling Terminology
Eggan (1950); Nerlove & Romney (1967); Kronenfeld (1974)

- Elder Brother
- Elder Sister
- Younger Sister of Male
- Younger Brother of Male
  - or Younger Sibling of Female

Age Categories

- Prenatal
  - Conception, 1st & 2nd vs. 3rd trimesters
  - Zygote, Blastocyst, Embryo
- Infancy
- Childhood
  - Toddlerhood, “Terrible Twos”, White-Food Stage
- Adolescence
  - Preteens, “’Tweens”
- Young Adults, Middle Aged
- Elderly, “Old Old”

The Eight Ages of Man
Erikson (1950, 1998)

<table>
<thead>
<tr>
<th>Age</th>
<th>Stage/Period</th>
<th>Conflict</th>
<th>Social Task</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infancy</td>
<td>Birth – 18 mos</td>
<td>Trust vs. Mistrust</td>
<td>Drive &amp; Hope</td>
</tr>
<tr>
<td>Early Childhood</td>
<td>18 mos – 2 yrs</td>
<td>Autonomy vs. Shame</td>
<td>Courage &amp; Will</td>
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<tr>
<td>Play</td>
<td>3 – 5 yrs</td>
<td>Initiative vs. Guilt</td>
<td>Purpose</td>
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<tr>
<td>School</td>
<td>6-12 yrs</td>
<td>Industry vs. Inferiority</td>
<td>Method &amp; Competence</td>
</tr>
<tr>
<td>Adolescence</td>
<td>12 – 18 yrs</td>
<td>Identity vs. Role</td>
<td>Devotion &amp; Fidelity</td>
</tr>
<tr>
<td>Young Adulthood</td>
<td>18 – 35 yrs</td>
<td>Intimacy &amp; Solidarity vs. Isolation</td>
<td>Affiliation &amp; love</td>
</tr>
<tr>
<td>Middle Adulthood</td>
<td>35 – 55</td>
<td>Generativity vs. Self-</td>
<td>Production &amp; Care</td>
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<tr>
<td>Late Adulthood</td>
<td>55 – 80s</td>
<td>Integrity vs. Despair</td>
<td>Wisdom</td>
</tr>
<tr>
<td>Very Old Age (?)</td>
<td>80s – Death</td>
<td>Despair vs. Faith, Hope</td>
<td>Transcendence</td>
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</table>
Periods of Transformation
Gould (1978)

<table>
<thead>
<tr>
<th>Periods</th>
<th>Years</th>
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<tbody>
<tr>
<td>Leaving Our Parents' World</td>
<td>16-22</td>
</tr>
<tr>
<td>I'm Nobody's Baby Now</td>
<td>22-28</td>
</tr>
<tr>
<td>Opening Up to What's Inside</td>
<td>28-34</td>
</tr>
<tr>
<td>Mid-Life Decade</td>
<td>35-45</td>
</tr>
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</table>

Passages
Sheehy (1976)

<table>
<thead>
<tr>
<th>Passages</th>
<th>Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pulling Up Roots</td>
<td>18-22</td>
</tr>
<tr>
<td>Trying Twenties</td>
<td>22-28</td>
</tr>
<tr>
<td>Catch-30</td>
<td>28-35</td>
</tr>
<tr>
<td>Deadline Decade</td>
<td>35-45</td>
</tr>
</tbody>
</table>

New Passages
Sheehy (1995)

<table>
<thead>
<tr>
<th>New Passages</th>
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<tbody>
<tr>
<td>Tryout Twenties</td>
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<tr>
<td>Turbulent Thirties</td>
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<tr>
<td>Flourishing Forties</td>
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<tr>
<td>Flaming Fifties</td>
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<tr>
<td>Serene Sixties</td>
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</table>
The Seasons of a Man’s Life
Levinson (1985)

<table>
<thead>
<tr>
<th>Age</th>
<th>Stage Description</th>
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<tbody>
<tr>
<td>22</td>
<td>Early Adult Transition</td>
</tr>
<tr>
<td>28</td>
<td>Entering the Adult World</td>
</tr>
<tr>
<td>33</td>
<td>Age 30 Transition</td>
</tr>
<tr>
<td>40</td>
<td>Settling Down</td>
</tr>
<tr>
<td>45</td>
<td>Mid-Life Transition (Crisis)</td>
</tr>
<tr>
<td>50</td>
<td>Entering Middle Adulthood</td>
</tr>
<tr>
<td>55</td>
<td>Age 50 Transition</td>
</tr>
<tr>
<td>60</td>
<td>Ending Middle Adulthood</td>
</tr>
<tr>
<td>65</td>
<td>Late Adult Transition</td>
</tr>
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</table>

Generations

<table>
<thead>
<tr>
<th>Decade</th>
<th>Generation</th>
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<tbody>
<tr>
<td>1860-1882</td>
<td>Missionary Generation</td>
</tr>
<tr>
<td>1883-1900</td>
<td>Lost Generation</td>
</tr>
<tr>
<td>1901-1924</td>
<td>G.I. Generation</td>
</tr>
<tr>
<td>1925-1942</td>
<td>Silent Generation</td>
</tr>
<tr>
<td>1943-1960</td>
<td>Baby Boomers (1946-1964?)</td>
</tr>
<tr>
<td>1961-1981</td>
<td>Generation X (Baby Bust)</td>
</tr>
<tr>
<td>1982-2001</td>
<td>Generation Y (Millennials)</td>
</tr>
</tbody>
</table>

Occupation Categories

- Socioeconomic Status
  - Occupation, Education, Income
- White-Collar vs. Blue-Collar
- Professional vs. Managerial
- Skilled vs. Unskilled Labor
The Caste System in Hindu India

- **Varna vs. Jati**

  - **Brahmans**
    - Priests, Scholars
  - **Kshatriyas**
    - Rulers, Warriors
  - **Vaisyas**
    - Merchants, Traders, Farmers
  - **Sudras**
    - Artisans, Peasants, Laborers, Slaves
  - **Panchamas (“Fifth Division”)**
    - Untouchables

Political Categories

- Democrat
- Republican
- Progressive
- Communist
- Independent
- Conservative
- “Left” vs. “Right”
- Neoconservative
- Paleoconservative
- Liberal
- Libertarian

The Japanese Diaspora (*Nikkei*)

- **Issei** Immigrated before 1924
- **Nisei** American-Born Children of *Issei* (Silent Generation)
- **Sansei** Baby-Boom Children of *Nisei*
- **Yonsei** Generation X/Y Children of *Sansei*
Nationality Categories
- European
  - Anglo-Irish vs. Continental
  - Northern vs. Southern
  - Western vs. Eastern
- African
  - North African vs. Sub-Saharan
  - African-American vs. Afro-Caribbean
- Asian
  - South vs. East vs. Southeast

Racial and Ethnic Categories
- White vs. Black
  - Negro, Afro-American, African-American
- Hispanic
  - Chicano, Latino
- Native American
  - Aleuts, Eskimos (Inuits), American Indians
- “Asian”
  - South Asian, East Asian, Southeast Asian
- Pacific Islander

Race, Nationality, and Ethnicity in the United States Census

1790 - 1850
- White
- Black
  - Free
  - Slave

1850-1870
- White
- Black
  - Mulatto
- American Indians
  - Only Those Taxed (added 1860)
  - All (added 1870)
- Chinese (added 1860)
- Japanese (added 1870)
Race, Nationality, and Ethnicity in the United States Census:
1890

- White
- Black
  - Mulatto, Quadroon, Octoroon
- American Indians
  - “Taxed”
  - Indian Territory, Living on Reservations
- Chinese
- Japanese

Race, Nationality, and Ethnicity in the United States Census:
1910

- White
- Black
- American Indians
- Chinese
- Japanese
- Asian
- Pacific Islander

Race, Nationality, and Ethnicity in the United States Census:
1930

- White
- Black
- American Indians
- Chinese
- Japanese
- Asian
- Pacific Islander
- Mexican
Race, Nationality, and Ethnicity in the United States Census:
1940
- White
- Black
- American Indians
- Chinese
- Japanese
- Asian
- Pacific Islander
- Mexican White Hispanic

Race, Nationality, and Ethnicity in the United States Census:
1950
- White
- Black
- American Indians
- Chinese
- Japanese
- Filipino
- "Other Race" (including Mixed Race)

Race, Nationality, and Ethnicity in the United States Census:
1960
- White
- Black
- American Indians
- Chinese, Japanese, Filipino
- Eskimos, Aleuts
- Hawaiians
- "Other Race" (including Mixed Race)
Race, Nationality, and Ethnicity in the United States Census:
1970
- White
- Black
- American Indians
- Chinese, Japanese, Filipino
- Eskimos, Aleuts, Hawaiians
- Koreans
- Spanish Language/Heritage/Origin, Descent
- “Other Race” (including Mixed Race)

Race, Nationality, and Ethnicity in the United States Census:
1980-1990
- White
- Black
- American Indians
- Chinese, Japanese, Filipino, Korean
- Eskimos, Aleuts, Hawaiians
- Spanish Language/Heritage/Origin, Descent
- Asian and Pacific Islander
  - Vietnamese, Asian Indian, Guamanian, Samoan
- “Other Race” (including Mixed Race)

Race, Nationality, and Ethnicity in the United States Census:
2000
Spanish, Hispanic, or Latino?
- No
- Mexican, Mexican-American, Chicano
- Puerto Rican
- Cuban
- Other

Race
- White
- Black, African-American
- American Indian/Alaska Native
  - Asian Indian
  - Chinese
  - Filipino
  - Japanese
  - Korean
  - Vietnamese
  - Other Asian
  - Native Hawaiian
  - Guamanian or Chamorro
  - Samoan
  - Other Pacific Islander
Race, Nationality, and Ethnicity
in the United States Census: 2010

**Hispanic, Latino, Or Spanish Origin?**
- No
- Mexican, Mexican-American, Chicano
- Puerto Rican
- Cuban
- Other

**Race**
- White
- Black, African-American, Negro
- American Indian/Alaska Native
- Asian Indian
- Chinese
- Filipino
- Japanese
- Korean
- Vietnamese
- Other Asian

- Native Hawaiian
- Guamanian or Chamorro
- Samoan
- Other Pacific Islander

Race, Nationality, and Ethnicity in
University of California Admissions
1995-2005

- American Indian
- African American
- Chicano/Latino
- Asian/Filipino/Pacific Islander
- White
- Other
- Unknown

Race, Nationality, and Ethnicity in
University of California Admissions
2008-2009

- African American/Black
- American Indian/Alaska Native
  - Specify Tribal Affiliation
- Chinese/Chinese-American
- East Indian/Pakistani
- Filipino/Filipino American
- Japanese/Japanese American
- Korean/Korean American
- Other Asian
  - Not incl. Middle Eastern
- Mexican/Mexican American/Chicano
- Other Spanish American/Latino
  - Ind. Cuban, Puerto Rican, Central American, South American
- Pacific Islander
  - Ind. Micronesian, Polynesian, other Pacific Islanders
- Vietnamese/Vietnamese American
- White Caucasian
  - Ind. Middle Eastern
- Other
### Race, Nationality, and Ethnicity in University of California Admissions
2009-2010, following “Count Me In” Campaign, 2007

- African American/Black
- American Indian/Alaska Native
  - Specify Tribal Affiliation
- Chinese
- Taiwanese
- Asian Indian
- Pakistani
- Japanese
- Korean
- Filipino
- Vietnamese
- Hmong
- Thai
- Cambodian
- Laotian
- Bangladeshi
- Indonesian
- Malaysian
- Sri Lankan
- Other Asian
  - Not incl. Middle Eastern
- Mexican/Mexican American/Chicano
- Other Spanish American/Latino
  - Incl. Cuban, Puerto Rican, Central American, South American
- Native Hawaiian
- Guamanian/Chamorro
- Samoan
- Tongan
- Fijian
- Other Pacific Islander
- White Caucasian
  - Incl. Middle Eastern
- Other

### Race, Nationality, and Ethnicity in the Research Participation Program
2004

- African American
- Caucasian
- Chinese
- Filipino
- Indian
- Japanese
- Korean
- Southeast Asian
- Other Asian
- Mexican, Mexican-American, Chicano
- Other Latino
- Native American
- Other

### Race, Nationality, and Ethnicity in
the Research Participation Program
2006

- Asian-American/Asian
  - Cambodian
  - Chinese
  - Filipino
  - Hmong
  - Indian
  - Japanese
  - Korean
  - Laotian
  - Pacific Islander
  - Pakistani
  - Sri Lankan
  - Taiwanese
  - Vietnamese
  - African-American/Black
    - Other
  - European-American/White
    - Eastern European
      - (e.g., Polish, Czech, Slavic)
    - Western European
      - (e.g., English, German, Italian)
    - Middle Eastern
      - (e.g., Arab, Persian, Israeli)
    - Other
  - Latino/Hispanic
    - Mexican-American, Chicano/a
    - Puerto Rican
    - Other
    - American Indian
Evolution of Models of Conceptual Structure
Smith & Medin (1981); Murphy (2002)

- Classical View: Proper sets
  - Summary: Defining Features
- Prototype View: Fuzzy Sets
  - Summary: Characteristic Features
- Exemplar View
  - No Summary
- Theory-Based View
  - Not Based on Similarity

Two Views of Prototypes
Smith & Medin (1981); Murphy (2002)

- Classical View: “All of None”
  - Defining Features Present or Absent
  - Object Belongs in Category or Not
- Dimensional View
  - Features Vary Along Dimensions
  - Prototype is Average Value of All Instances
- Featural View
  - Probabilistic Relation to Category Membership
  - Prototype Has Many Characteristic Features

Personality:
The Classical Fourfold Typology
Kant (1798), after Hippocrates and Galen

- **Melancholic**
  - Anxious
  - Worried
  - Unhappy
  - Suspicious
  - Serious
  - Thoughtful
- **Phlegmatic**
  - Reasonable
  - High-Principled
  - Controlled
  - Persistent
  - Steadfast
  - Calm
- **Choleric**
  - Quickly Roused
  - Egocentric
  - Exhibitionist
  - Hot-Headed
  - Histrionic
  - Active
- **Sanguine**
  - Playful
  - Easy-Going
  - Sociable
  - Carefree
  - Hopeful
  - Contented
Dimensional Analysis of the Classical Fourfold Typology

- **Melancholic**
  - Strong
  - Anxious
  - Unhappy
  - Suspicious
  - Serious
  - Thoughtful

- **Phlegmatic**
  - Reasonable
  - High-Principled
  - Controlled
  - Persistent
  - Steadfast
  - Calm

- **Choleric**
  - Quick-Headed
  - Egocentric
  - Exhibitionist
  - Hot-Headed
  - Histrionic
  - Active

- **Sanguine**
  - Playful
  - Easy-Going
  - Sociable
  - Carefree
  - Hopeful
  - Contented

Diagnosis as Categorization

- Diagnosis Classifies Patient
  - Symptoms are Features
  - Syndromes are Categories
- Diagnosis as Feature-Matching
  - Match Patient's Symptoms to Syndrome
- **Diagnostic & Statistical Manual (DSM)**
  - American Psychiatric Association
  - "Official" List of Syndromes, Features
  - Used for Classifying Mental Illnesses

Growth of the Psychiatric Nosology

- **American Psychiatric Association**
- **Diagnostic and Statistical Manual of Mental Disorders**
- Chart showing the number of syndromes from 1952 to 2013:
  - DSM-I to DSM-IV
  - DSM-5

Psychiatric Diagnoses as Proper Sets

**Symptoms as Defining Features**

Bleuler (1911)

The “4 As” of Schizophrenia

- Association Disturbance
- Anhedonia
- Ambivalence
- Autism

Schizophrenic Subtypes

- Simple
- Hebephrenic
- Catatonic
- Paranoid

Schizophrenic Subtypes

- Simple
- Hebephrenic
- Catatonic
- Paranoid

Hierarchical Organization of Psychopathology

**Mental Illness**

- Psychosis
- Neurosis

**Schizophrenia**

- Simple
- Hebephrenic
- Catatonic
- Paranoid

Problems with Diagnoses as Proper Sets

- Partial Expression
  - Schizoid Personality Disorder
  - Schizotypal Personality Disorder
  - Paranoid Personality Disorder

- Combined Expression
  - Pseudoneurotic Schizophrenia
  - Pseudopsychopathic Schizophrenia
  - Schizoaffective Disorder
  - Borderline Personality Disorder
Diagnoses as Fuzzy Sets


- Characteristic Symptoms
  - Textbook Cases as Prototypes
- Heterogeneity within Category
  - Family Resemblance
- No Clear Boundaries

Schizophrenia

*DSM-5* (2013)

2 or More Symptoms

- Delusions
- Hallucinations
- Disorganized Speech
- Grossly Disorganized or Catatonic Behavior
- Negative Symptoms
  - Diminished Emotional Expression
  - Avolition

Plus

- Postmorbid Decline
  - Occupational
  - Social
  - Self-Care
- Duration 6+ Months
- Subtypes?
  - Acute vs. Chronic
  - First vs. Multiple Episodes
  - Type I vs. Type II
    - Positive vs. Negative Symptoms

Major Depressive Disorder

*DSM-5* (2013)

5+ Symptoms Over 2 Weeks

- Depressed Mood
- Diminished Interest
- Weight Loss
- Insomnia or Hypersomnia
- Psychomotor Agitation or Retardation

- Loss of Energy or Fatigue
- Worthlessness or Guilt
- Inability to Concentrate or Indecisiveness
- Thoughts of Death or Suicide
Implications of Categorization

• Logically, Categories are Structured as Proper Sets
  – Represented by Defining Features

• Psychologically, Categories are Structured as "Fuzzy" Sets
  – Represented by Prototypes, Exemplars
  – Representations Differ by Expertise

• Principles of Reasoning Do Not Necessarily Follow the Principles of Formal Logic
  – Cannot be Discovered by Reason Alone

Natural Categories of Persons?

After Roger Brown (1980)

• Sex (Gender)
• Kinship
• Age
• Occupation
• Nationality
• Race/Ethnicity
• Personality Types (nouns)
• Local Culture (Stereotypes)

Stereotypes as Social Categories

Hamilton & Sherman (1989); Judd & Park (1993)

• Conception of the Character of a Group
  – Shared by Members of Ingroup
  – Concerning Members of Outgroup

• Functions of Social Stereotypes
  – Positive
    • Reduce Effort in Impression-Formation
    • Infer Unobserved Features
    • Predict Past and Future Behaviors
  – Negative
    • Emotional Prejudice
    • Behavioral Discrimination
Stereotypes Defined

“A stereotype is an oversimplified picture of the world, one that satisfies a need to see the world as more understandable than it really is.”

Lippman (1922)

“A stereotype is a cognitive structure that contains the perceiver’s knowledge, beliefs, and expectations about a human group.”

Hamilton & Trolie (1986)

Elements of Stereotypes

Judd & Park (1993), after Lippman (1922)

- Generalizations About Social Groups
- Rigidly Held
- Illogically Derived
- Erroneous in Content

Perspectives on Stereotyping

- Economic
  - Realistic Group Conflict Theory
  - Ethnocentrism
- Motivational
  - Social Identity Theory
  - Distinction between Us and Them
- Cognitive
  - Inevitable Outcome of Categorization
    • “Simple Model of Great Blooming, Buzzing, Confusion of Reality” (Lippman, 1922)
Contents of Social Stereotypes

Hamilton & Sherman (1994)

- Features (Traits)
  - Variability
- Instances (Exemplars)
  - Exceptions

“He was wowed by Obama’s oratorical gifts and believed that the country was ready to embrace a black presidential candidate, especially one such as Obama – a ‘light-skinned’ African American ‘with no Negro dialect, unless he wanted to have one,’ as he later put it privately.”

Mark Halperin & John Heileman, Game Change (2010)

“The Princeton Trilogy”

Katz & Braly (1933); Gilbert (1951); Karlins et al. (1969)

- 3 Generations of Princeton University Students
  - List of 84 Personality Traits
    - Chose 5 Characteristic of Different Ethnic Groups
- 1933: Considerable Agreement
  - Positive Bias Towards Ingroup
- 1951: Less Agreement
  - Disliked Making Generalizations
- 1969: Task Even More Objectionable
  - Stereotypes Now More Positive

Comparative National Stereotypes

Katz & Braly (1933)

<table>
<thead>
<tr>
<th>Americans</th>
<th>Germans</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrious</td>
<td>Industrious</td>
</tr>
<tr>
<td>Intelligent</td>
<td>Scientifically Minded</td>
</tr>
<tr>
<td>Materialistic</td>
<td>Sordid</td>
</tr>
<tr>
<td>Ambitious</td>
<td>Intelligent</td>
</tr>
<tr>
<td>Progressive</td>
<td>Methodical</td>
</tr>
<tr>
<td>Pleasure-Loving</td>
<td>Extremely Nationalistic</td>
</tr>
<tr>
<td>Alert</td>
<td>Progressive</td>
</tr>
<tr>
<td>Efficient</td>
<td>Efficient</td>
</tr>
<tr>
<td>Aggressive</td>
<td>Jovial</td>
</tr>
<tr>
<td>Straightforward</td>
<td>Musical</td>
</tr>
<tr>
<td>Practical</td>
<td>Persistent</td>
</tr>
<tr>
<td>Sportsmanlike</td>
<td>Practical</td>
</tr>
</tbody>
</table>
Stability of National Stereotypes
Katz & Braly (1933); Karlins, Coffman, & Walters (1969)

Germans in 1933
- Scientifically Minded
- Industrious
- Stolid
- Intelligent
- Methodical
- Extremely Nationalistic
- Progressive
- Efficient
- Jovial
- Musical
- Persistent
- Practical

Germans in 1967
- Industrious
- Scientifically Minded
- Efficient
- Extremely Nationalistic
- Aggressive
- Methodical
- Arrogant
- Ambitious
- Progressive

Secular Trends in Stereotypes

- Fading of Negative Stereotypes
  - Select Different Traits
  - Decreased Consistency
  - Less Negative Valence
- Problems with Princeton Paradigm
  - Instructions Ambiguous
    • Knowledge of Stereotype vs. Personal Belief
  - No Assessment of Respondents’ Own Prejudice
  - Outdated Adjective Set

Re-Assessment of Stereotyping
Devine (1989); Devine & Elliot (1995)

- Stereotypes Not the Same as Personal Beliefs
  - Associations of Features with Group Label
    • Acquired Through Socialization
    • Automatically Activated by Group Member
  - Beliefs: Propositions Accepted as True
    • Not Necessarily Congruent with Stereotypes
    • Control Expression of Prejudice
- Levels of Prejudice
  - High: Beliefs Congruent with Stereotype
  - Low: Beliefs Incongruent with Stereotype
Re-Assessment of African-American Stereotype
Devine & Elliot (1995)

- Checklist: 93 Adjectives
  - Most from Katz & Braly (1933)
- Dual Assessment
  - Cultural Stereotype
  - Personal Beliefs
- Social/Political Attitude Survey
  - Included Modern Racism Scale

- Discrimination against blacks is no longer a problem in the United States.
- It is easy to understand the anger of black people in America.
- Blacks have more influence upon school desegregation plans than they ought to have.
- Blacks are getting too demanding in their fight for equal rights.
- Blacks should not push themselves where they are not wanted.
- Over the past few years, blacks have gotten more economically than they deserve.
- Over the past few years, the government and the news media have shown more respect to blacks than they deserve.

Re-Assessment of African-American Stereotype
Devine & Elliot (1995)

Favorability of Stereotype as a Function of Prejudice
Devine & Elliot (1995)
Stereotype and Personal Belief
Devine & Elliot (1995)

- Stereotypes Are Coherent and Consistent
  - Widely Shared Knowledge
  - Negative
    - Precise Content Changes Across Time
- Personal Beliefs May Be Different
  - High Prejudice, Endorse Stereotype
    - Automatically Activated, Translated into Behavior
  - Low Prejudice, Reject/Qualify Stereotype
    - Automatically Activated, Consciously Controlled
      - Requires Time, Effort, Cognitive Capacity

Stereotypes and Individuals

- Inductive Aspect
  Attribute to Entire Group Features of Single Instance
- Deductive Aspect
  Attribute to Every Instance Features Ascribed to Group
  True of All?
  True of Most?
  Typical?
  What Does Typical Mean?

Bayesian Analysis of the German Stereotype

| Trait    | p(T) | p(T|G) | Diagnostic Ratio |
|----------|------|-------|-----------------|
| Efficient | 49.8 | 63.4  | 1.27            |
| Nationalistic | 35.4 | 56.3  | 1.59            |
| Industrious | 59.8 | 68.2  | 1.14            |
| Scientific | 32.6 | 45.5  | 1.32            |

Diagnostic Ratio = \( \frac{p(T|G)}{p(T)} \)
“Typicality” in Stereotype Content
McCaulley & Stitt (1978)

• Stereotype Traits...
  – Need Not Be Present in All Group Members
  • Stereotypes are Overbroad
  – Need Not Be Present in Majority of Members
  – May Be Less Frequent than Nonstereotype Traits
  – Relatively More Probable in Group Members
    • Compared to Another Group (Ingroup)
    • Compared to Population as a Whole
  – Probabilities are Subjective

Elements of Stereotypes
Judd & Park (1993), after Lippman (1922)

• Generalizations About Social Groups
• Rigidly Held
• Illogically Derived
  • Erroneous in Content (?)
Negative Stereotyping

\[ r = .97 \]

\[ M \text{ Discrepancy} = -16\% \]

Even More Negative Stereotyping

\[ r = .97 \]

\[ M \text{ Discrepancy} = -25\% \]

A Completely Negative Stereotype

\[ r = .95 \]

\[ M \text{ Discrepancy} = -25\% \]
Accuracy of Political Stereotypes

Judd & Park (1993)

- Departures from Neutrality
- Inaccuracy
  - Stereotype Inaccuracy (Over/Underestimation)
  - Valence Inaccuracy (More/Less Positive/Negative)
  - Dispersion Inaccuracy (Over/Undergeneralization)
- Full Accuracy Design
  - Two Contrasting Groups
    - Stereotypic Attributes
    - Counterstereotypic Attributes
      - Valid Objective Criterion

Accuracy of Political Stereotypes

Park & Judd (1993)

- 1976 National Election Study
- Democratic and Republican Voters
  - Strength of Party Affiliation
- Rate 10 Political Issues
  - Rights of Accused
  - Aid to Minorities
  - School Busing
  - Government Health Insurance
  - Own Position (Criterion)
  - Position of Democrats in General
  - Position of Republicans in General

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![Discrepancy Score Diagram]

- Targets
  - Democrats
  - Republicans

Subjects

Democrats

Republicans

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Sensitivity of Political Judgments

Judd & Park (1993)

Aspects of Stereotyping


- Discrepancy from Perfection
  - Accuracy of Beliefs About a Group
- Correspondence with Differences
  - Appreciation of Variability Within a Group
- Personal Stereotypes
  - Individual’s Beliefs About a Group
- Consensual Stereotypes
  - Group Average Beliefs About Another Group

Four Types of Stereotype Inaccuracy


- Discrepancies from Perfection
  - Personal
    - Difference between Individual’s Beliefs vs. Criterion
  - Consensual
    - Difference between Group Mean vs. Criterion
- Correspondence with Criteria
  - Personal
    - Correlation of Individual’s Beliefs with Criterion
  - Consensual
    - Correlation of Group Average with Criterion
Ethnic and Racial Stereotyping

• Consensual Stereotypes Mostly Accurate
  – Most < 10% or .25 SD of Criterion
  – Most Others are “Near Misses”, 10% >= 20%
  – Relatively Few are “Inaccurate”, > 20%
• Little Exaggeration of Real Differences
• Correspondence “Very Strong”
  – Personal Stereotypes, .36 < r < .69
  – Consensual Stereotypes, .53 < r < .93

Gender Stereotyping

• Consensual Stereotypes Mostly Accurate
  – Most < 10% or .25 SD of Criterion
  – Most Others are “Near Misses”, 10% >= 20%
  – Relatively Few are “Inaccurate”, > 20%
• Little Exaggeration of Real Differences
• Correspondence “Very Strong”
  – Personal Stereotypes, .40 < r < .60
  – Consensual Stereotypes, .34 < r < .98

Problems with Studies

• Very Few Studies of Accuracy
  – Consensus that Stereotypes are False
• Wide Variations in Method
  – Convenience Samples
  – Self-Reports vs. Objective Criteria
• May Miss Relevant Characteristics
  – Relevant to Group
  – Relevant to Stereotype
Effects of Stereotypes

The Stereotype Corollary to the Thomas Theorem
W.I. Thomas & D.S. Thomas (1928)

"If men define situations as real, they are real in their consequences"

If Stereotypes are Defined as Real, They are Real in Their Consequences

Effects of Stereotypes on the Target
• Outright Prejudice, Discrimination
• Expectancy Confirmation
  – Behavioral, Perceptual
• Attributional Ambiguity
  – Positive Statements to Condescension?
  – Negative Statements to Prejudice
• Stereotype Avoidance
  – Blunt Expectancy Confirmation
• Stereotype Vulnerability
  – Anxiety, Frustration
• Stereotype Threat
  – Diminished Performance

Effects of Stereotypes on the Perceiver
• Outright Prejudice, Discrimination
• Stereotype Lift
  – Enhanced Performance
  – Magnifies Ingroup-Outgroup Differences

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Effects of Stereotypes on Perception
Jussim et al. (1995)

Stereotype Change

- Bookkeeping Model
  - Information Integration
- Conversion Model
  - Stereotype Disconfirmation
- Category Differentiation
  - Subtypes
- Role of Awareness
  - Hypothesis-Testing
  - Disconfirmatory Evidence

Stereotypes are Automaticity Elicited

- Presence of Outgroup Member
- Features of Automaticity
  - Inevitable Evocation
  - Incorrigible Execution
  - Effortless
  - No Interference
- Unconscious
  - Operate Outside Phenomenal Awareness
  - Operate Independent of Voluntary Control
Race-Based Priming
Devine (1989)

- Thought-Listing Procedure
  - Elicit “Black” Stereotype from Whites
    - Poverty, Education/Intelligence, Crime, Athletics
- Vigilance task
  - Prime White Subjects with Black Stereotype
    - Masked Presentation
    - Low vs. High Density of Primes
- Read “Donald” Story
  - Not Described in Terms of Race
- Evaluate Donald

“Donald” Story
Srull & Wyer (1979)

- Refused to Let Salesman into House
  - Had a Visitor
- Refused to Pay His Rent
  - Until Landlord Repainted Apartment
- Took His Car to Another Mechanic
  - Couldn’t Get It Serviced the Same Day
- Bought Item at Hardware Store
  - Demanded Money Back

Personality Impressions after Preconscious Race-Based Priming
After Devine (1989), Experiment 2

- Hostility
- Other Negative

Density of Stereotypical Primes

20% 80%

Impression Negativity

20% 80%

20% 80%

Hostility Other Negative
Automatic and Controlled Processes in Race-Based Priming
Devine (1989), Studies 2 and 3

• Measure Racial Prejudice
  – “Modern Racism Scale”
• Effects on Race-Based Priming
  – No Differences Due to Racial Prejudice
• Unconscious Prejudice
  – Stereotype Operates Automatically
  – Stereotype Itself is Unconscious(?)

The “Blindspot”
Banaji & Greenwald (2013)

• Hidden biases we all carry from a lifetime of exposure to cultural attitudes
  – Age, Gender, Race, Ethnicity, Religion, Nationality
  – Sexuality, Social Class, Disability Status
• Perceptions of social groups – without our awareness or conscious control – shape our likes and dislikes and our judgments about people's character, abilities, and potential

Implicit Attitude Test
Greenwald et al. (1998), Banaji & Greenwald (2013)

• Make Dichotomous Judgment
  • Phase 1: Is X a Swedish or Finnish name?
    – Aaltonen, Eriksson, Haapakoski, Lind, Numminen, Sundqvist
  • Phase 2: Is Y a Good or a Bad Thing?
    – Admiration, Aggression, Caress, Abuse, Freedom, Crash
• Then Superimpose Tasks
  – Swedish-Finnish Alternates with Good-Bad
    • Phase 3: Swedish Shares Key with Good
      – Finnish Shares Key with Bad
    • (Phase 4 is a Control Condition)
    • Phase 5: “Swedish” Shares Key with “Bad”
Pattern of Responses Reveals Implicit Associations
Greenwald et al. (1998)

Stimulus-Response Compatibility
Fitts & Seeger (1953), after Small (1951)
Faster Responses when Compatible with Stimulus
“Left” with Left key, “Right” with Right

- Implication of S-R Compatibility
  - Same Response to Swedish Names, Positive Words
  - Faster Latencies: Association **Swedish ↔ Good**
  - Same Response to Finnish Names, Negative Words
  - Faster Latencies: Association **Finnish ↔ Bad**

The “Race IAT”
Paper & Pencil Version
Project Implicit (2007)

Implicit Stereotyping in White Subjects
Greenwald et al. (1998)

Correlation with Explicit Prejudice: .07 < r < .30
Implicit Stereotyping in Japanese and Korean Subjects
Greenwald et al. (1998)

Correlation with Explicit Prejudice: \( r > 0.4 \) to \( r < 0.64 \)

- Koreans
- Japanese

Subjects

Response Latency (msec)

Correlations Between Explicit and Implicit Attitudes
Nosek (2007)

\[ r_{med} = 0.48 \]

External Validity of the IAT
Greenwald et al. (2009)

122 Reports, 184 Samples, 14,900 Subjects

Problems with the IAT
Arkes & Tetlock (2004); Levitin (2013)

• Confounding Factors
  – Target Familiarity
  – Task Difficulty
  – Complementarity Assumption
    • Negative vs. “Less Favorable”
    • Positive vs. “More Favorable”
  – Associations vs. Attitudes

• Construct Validity
  – Predict External Criterion
  – Relevant Group Differences
    • “Would Jesse Jackson Fail the IAT?”

Problems with IAT

• Dissociation from Explicit Measure?
  – Significant Correlations Show Validity
  – Nonsignificant Correlations Show Dissociation
  – Correlations Usually Significant
    • Increase with Importance
    • Decrease with “Social Sensitivity”

• The Psychologist’s Fallacy (James, 1890)
  – Every Event has a Psychological Explanation
  – Psychologist’s Explanation is the Right One

Social Categories:
Accurate Reflection vs. Systematic Distortion

• Natural Categories Exist in the Real World
  – Independent of Mind of Perceiver
  – Reflected in Mind of Perceiver

• Some Social Categories are Social Constructs
  – Exist in Mind of Perceiver
  – Systematic Distortion of Reality
  – Become Real Through Behavior