Theoretical and Methodological Issues in Conducting Research Related to Diversity among Nurses

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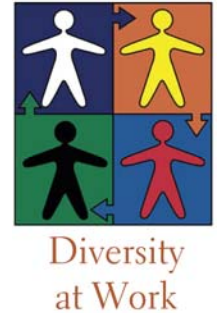
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Overview

- Approaches to conceptualizing and measuring diversity
- Theoretical underpinnings
- Application to *Diversity at Work* study
- Methodological challenges (e.g., research design, measurement considerations, and sampling approaches)
- Recommendations and considerations

Diversity

Broadly defined to refer to a number of **attributes** that may lead to the perception that another person is different (or similar) from oneself.
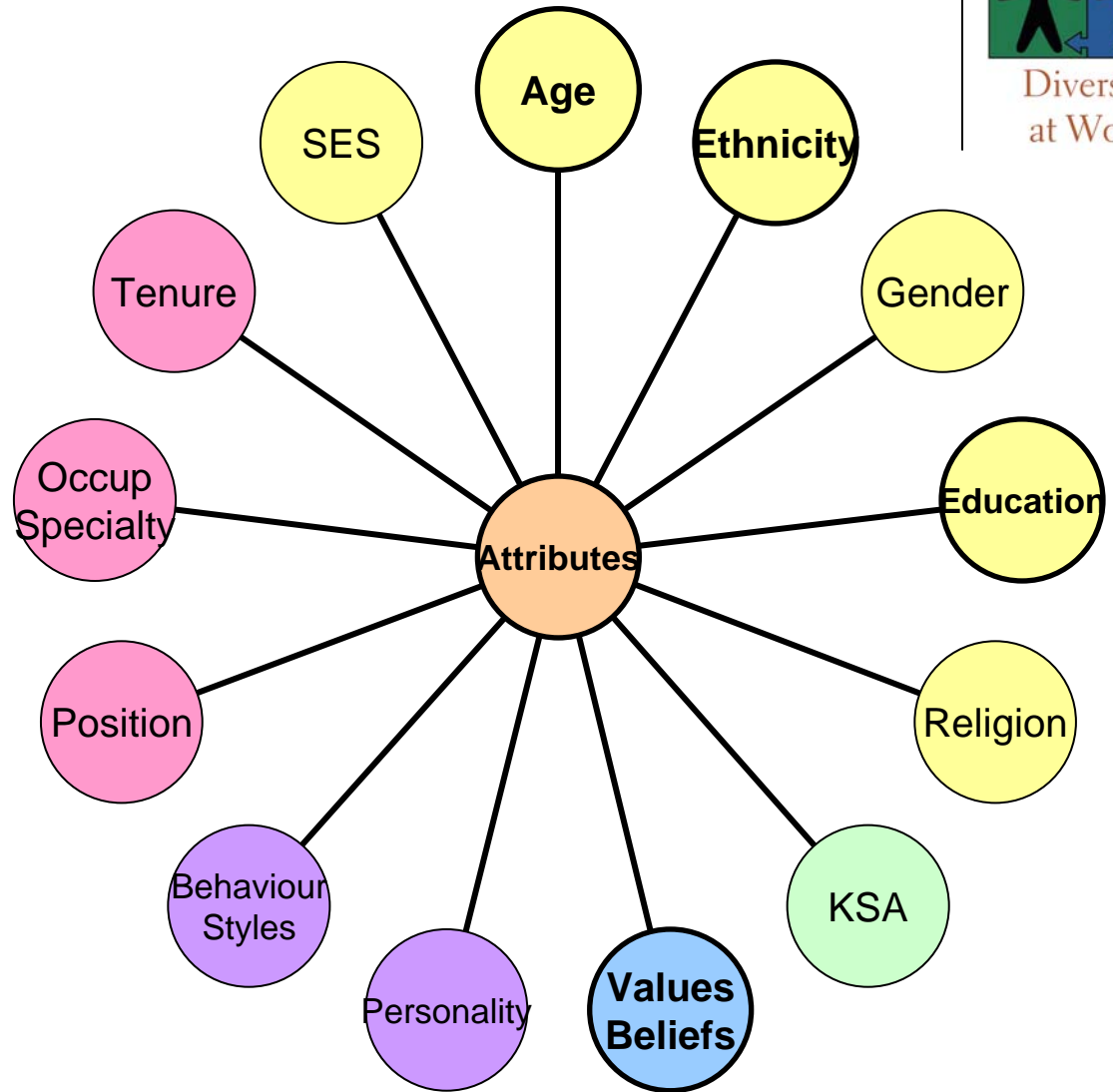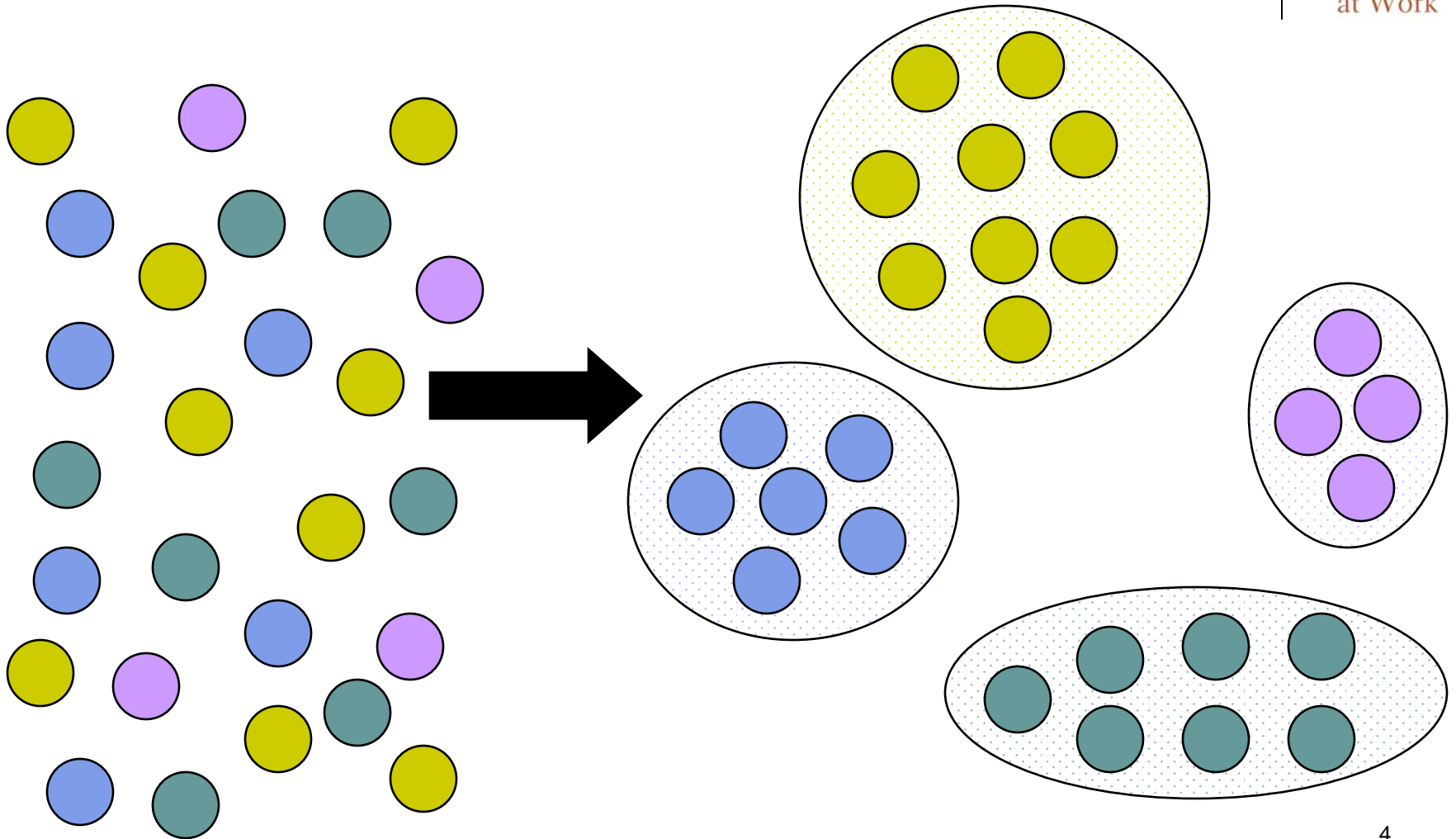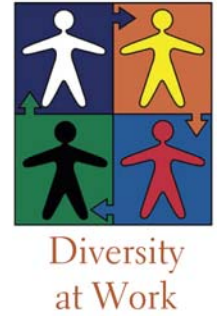

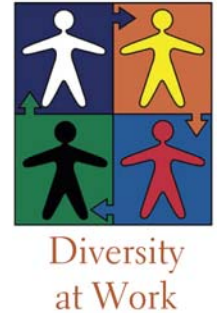KSA = Knowledge, skills and attitudes
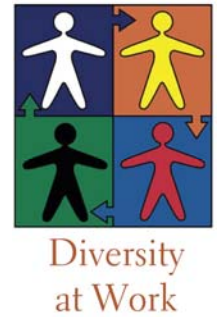
Conceptualizing Diversity
## *Simple/Categorical Approach*

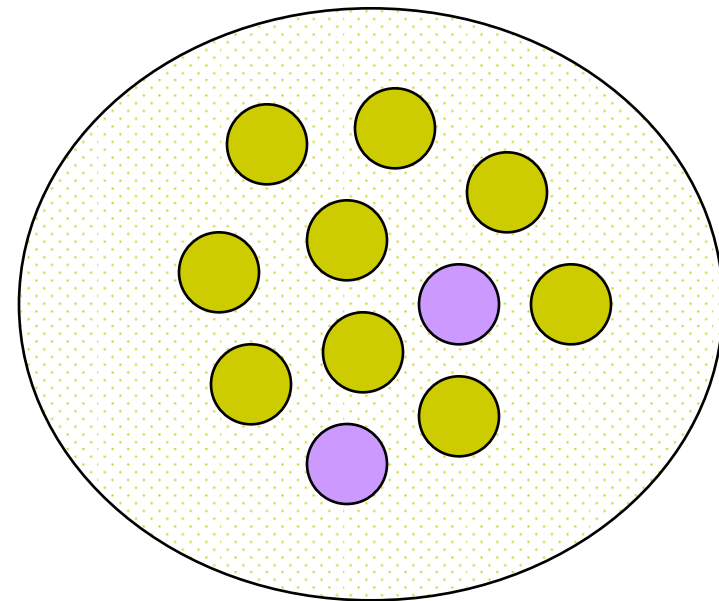# Conceptualizing *Diversity*

1. Simple/Categorical Approach

- Categorical approach to studying effects of demographics characteristics (e.g., age, gender)
- Individuals with certain traits are similar in their work behaviours or attitudes
- Limitations
  - Ignores variations in attitudes and behaviours among individuals belonging to the same category
  - Ignores importance of situational context

Conceptualizing Diversity
Compositional Approach
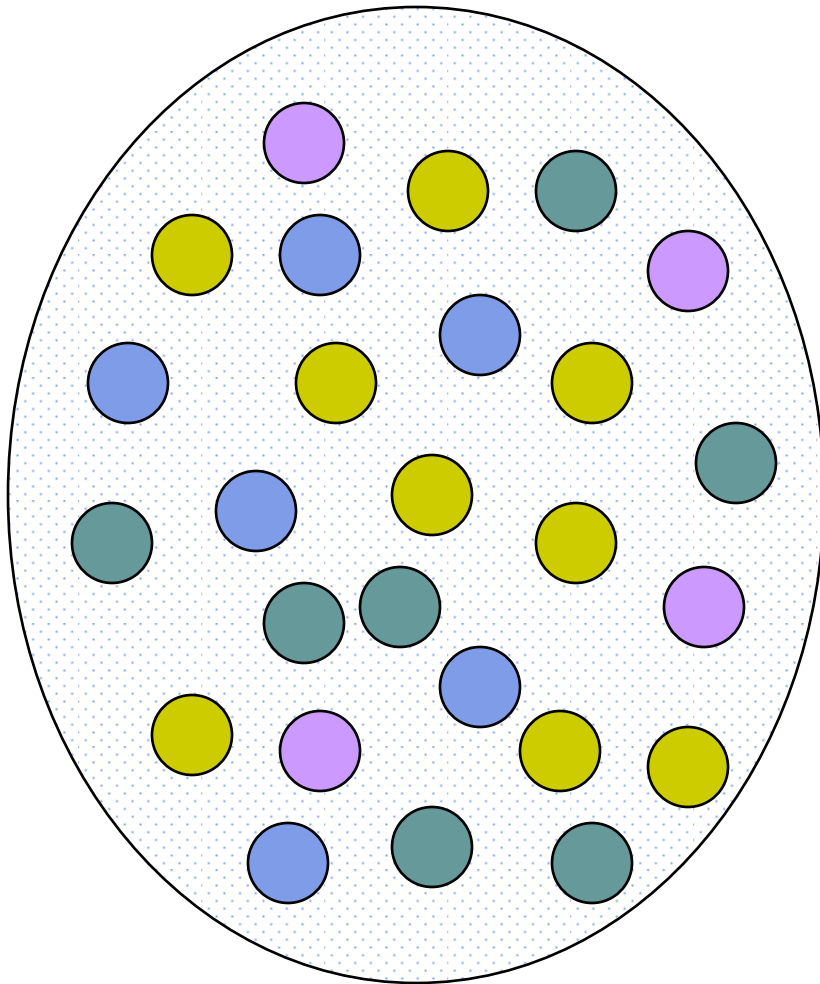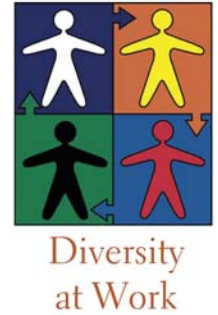
Group A
Heterogeneous
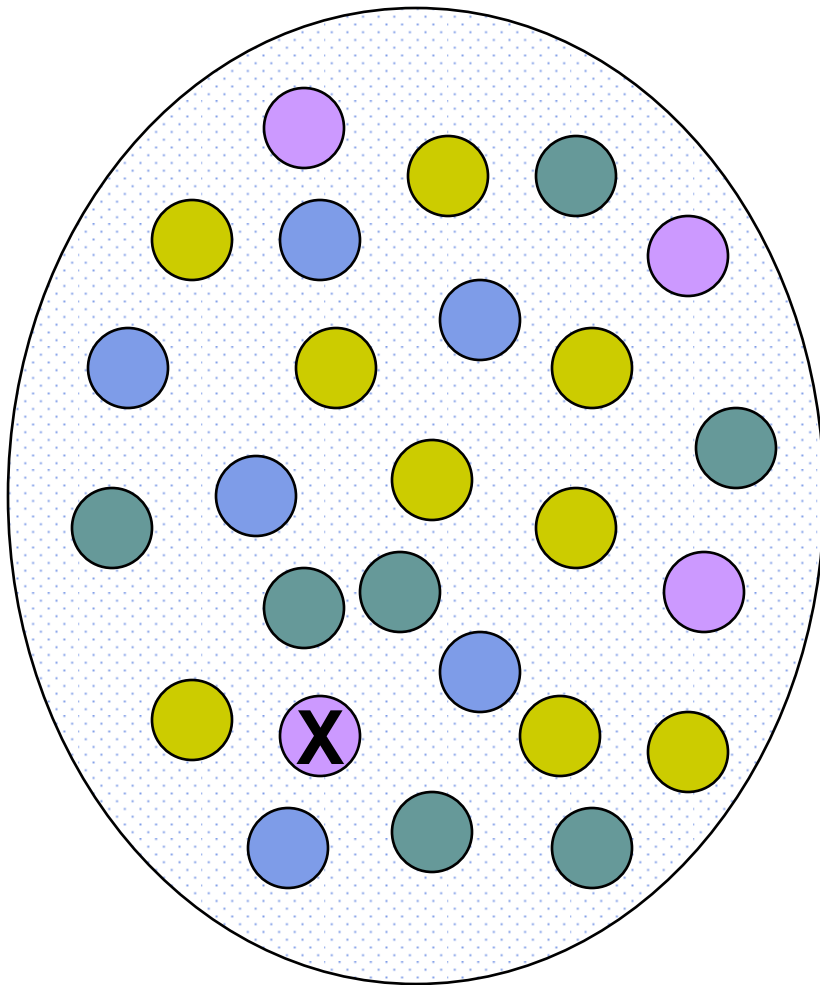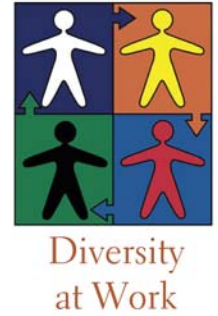
Group B
Homogeneous

Conceptualizing *Diversity*

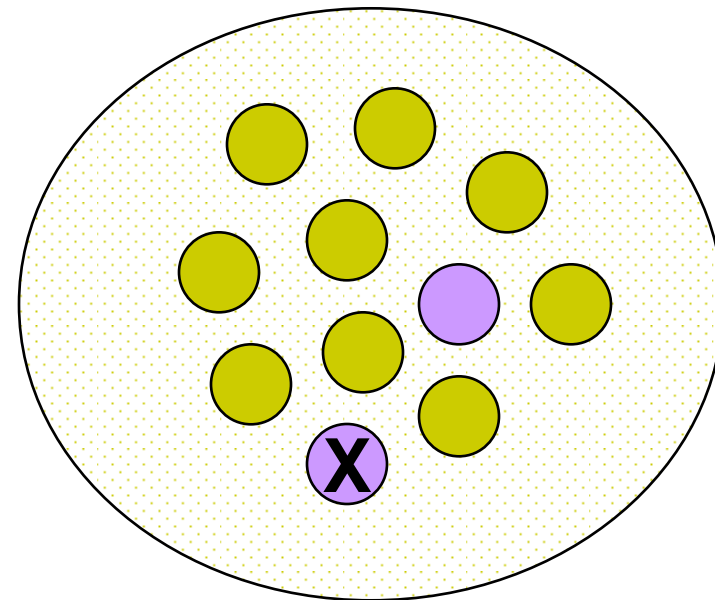*2. Compositional Approach*

- Degree of homogeneity or heterogeneity in a work unit (collective profile)

- Limitations

  - Ignores variations in attitudes and behaviours among individuals belonging to the same category

  - Ignores importance of situational context

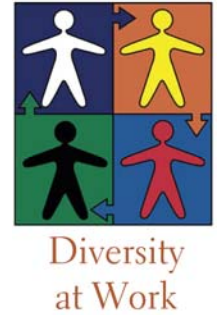# Conceptualizing Diversity
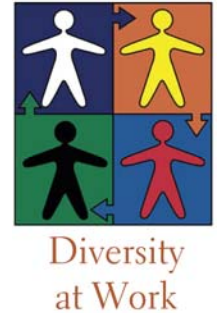## *Relational Approach*

Group A

Group B

# Conceptualizing *Diversity*

3. Relational Approach

- Degree of relative difference between an individual and other workgroup members

- Relational and contextual

- Actual versus perceived differences

Theoretical Foundation

- *Social Identity Theory*
  - Individuals classify themselves and others into social categories.
  - Categorization process implicitly involves a distinction between in-groups and out-groups (us-them).

- *Similarity-attraction Theory*
  - Individuals who possess similar characteristics and attitudes will be attracted to one another.
  - Similarity and interpersonal attraction leads to frequent communication and positive exchanges, high individual sense of belonging, and a desire to maintain group affiliation.

Theoretical Foundation
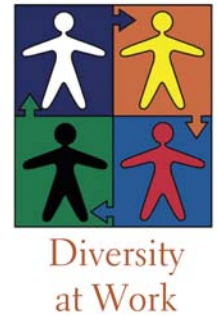
- *Ecological and Cognitive Models*
  - Models of variation, selection and retention to highlight the benefits of heterogeneity in information resources.

- *Distributive Justice Theory*
  - Relative comparison among members to suggest that diversity in attributes that connote prestige or power (e.g., pay, rank) leads to internal competition, suppression of voice, reduced communication, and interpersonal undermining.
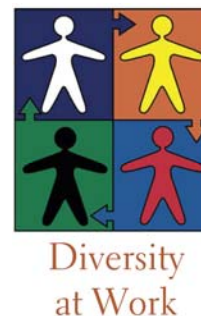
Predicted Outcomes

- Reduced cohesiveness, interpersonal conflict, distrust, decreased task performance
- Creativity, innovation, higher decision quality, task conflict, increased unit flexibility
- Workgroup competition, deviant behaviour, reduced member input, withdrawal
- Turnout, organizational commitment, job satisfaction, absenteeism
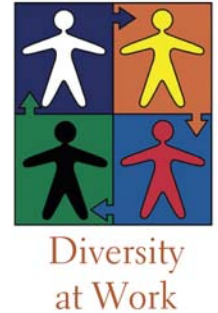
Example – *Diversity at Work*

1. Examine whether relational diversity (age, education, ethnicity and work values) contributes to the professional burnout of nurses.

2. Determine whether diversity is associated with individual's involvement in conflict, and if this involvement, in turn, is associated with burnout.
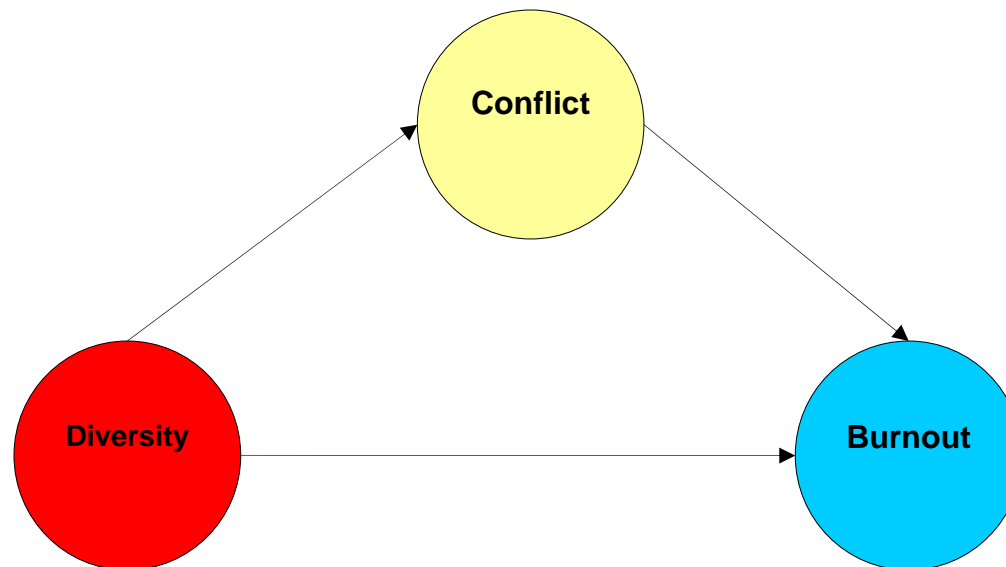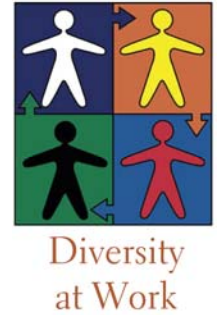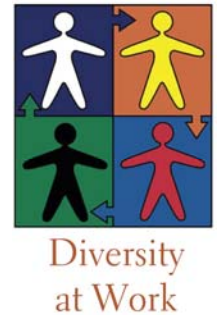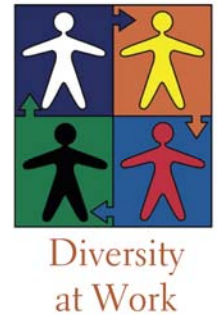
Sample

- Setting
  - 2 acute care hospitals (1 health authority)
  - Medical, surgical and other "specialty" nursing units

- Sample
  - 603 nurses, 80% RNs
  - 17 nursing units
  - 82% response rate

Methodological Challenges

- Measurement considerations (operationalization of diversity)
- Research design
- Sampling

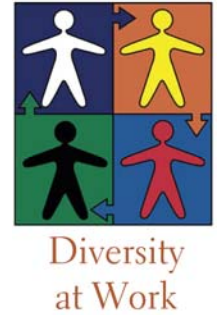# Operationalization of Simple Approach to Diversity

- Measures of variability – standard deviation, range, and interpercentile

$$SD = \sqrt{\frac{\sum\left(X - \overline{X}\right)^2}{N - 1}}$$

- Group differences – chi-squared, *t* test, and ANOVA

Operationalization of Compositional Diversity

1. Blau Index of Heterogeneity

- Categorical variables

$$1 - \sum p_k^2$$

p = proportion of group members in a category
k = # of different categories represented
    in a group

2. Coefficient of Variation

- Continuous variables

$$\sqrt{\left[\sum (\mathrm{X} - \overline{\mathrm{X}})^2 \Big/ N\right]} \Big/ \overline{\mathrm{X}}$$

SD divided by the mean

Operationalization of Relational Diversity

1. Subjective measures (perceived)
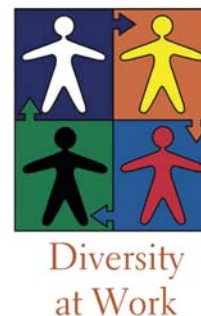
   - 4-items "how similar"

2. Objective measures (actual)

   - Euclidean distance measure (D-score)

   $$\left[\frac{1}{n} \sum_{j=1}^{n} (S_i - S_j)^2 \right]^{\frac{1}{2}}$$

   - Polynomial regression

   $Y = b_{1i}nd + b_2grp + b_1ind^2 + b_2grp^2 + b_3indgrp + e$

Relational Diversity (actual)

- Euclidean distance measure (D-score)

$$\left[\frac{1}{n} \sum_{j=1}^{n} (S_i - S_j)^2 \right]^{\frac{1}{2}}$$

S_i = the focal individual's score on a specific attribute

S_j = all other workgroup members' scores on the same attribute

- The <u>square root</u> of the <u>summed squared differences</u> between an *individual's value (*S_i*)* *on a demographic variable* and *the value on the same variable for <u>every other individual</u> (*S_j*) in the work unit sample*, divided by the <u>total number of respondents</u> in the work unit (*n*), including the focal individual.

Criticisms of D-Score
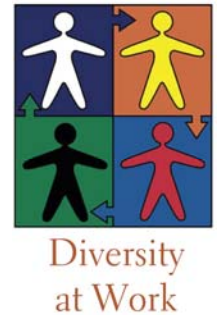
- Does not account for any effects beyond the linear plane (quadratic)
- Measures only magnitude, rather than directional effects
- Treats nominal classifications as if they were interval data (e.g., each ethnic classification is thought to be equally distant from each other)
- Equality – Ignores the possibly that the separate components of the Si score (focal individual) – Sj score (all other members' score) may disproportionately contribute to the prediction of individual outcomes

Polynomial Regression

- $Y = b_1\text{ind} + b_2\text{grp} + b_1\text{ind}^2 + b_2\text{grp}^2 + b_3\text{indgrp} + e$

individual
score on the
given attribute

workgroup score on
the given attribute

individual-level
attribute score
squared

workgroup attribute
score squared

(interaction term)
individual attribute
score multiplied by
workgroup
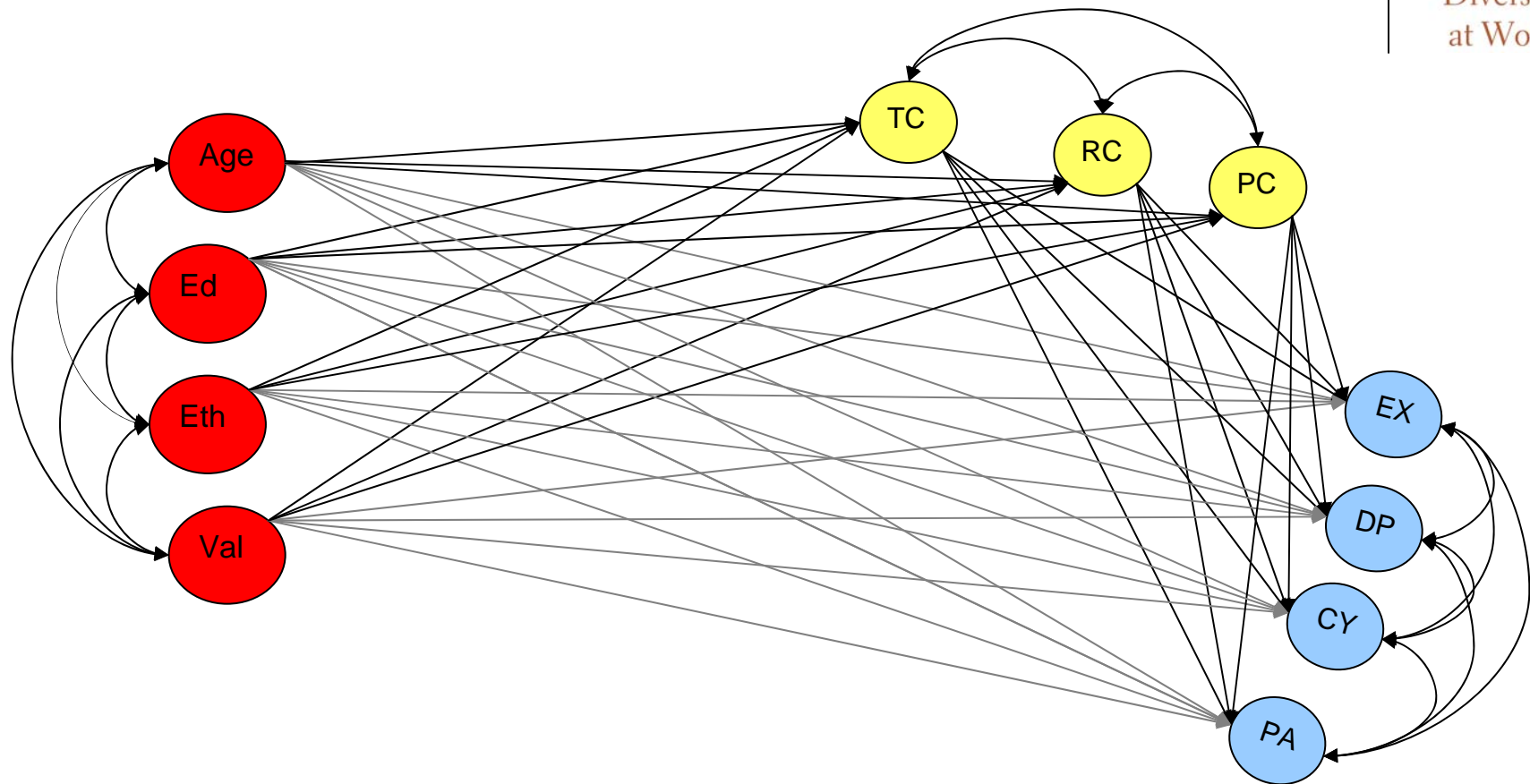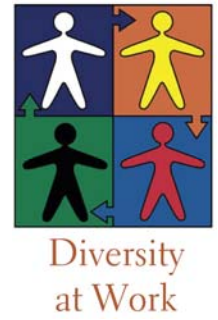attribute score
variable

error
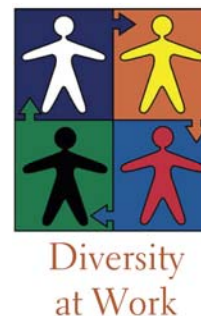
Polynomial Regression

- $Y = b_{1i}nd + b_2grp + b_1ind^2 + b_2grp^2 + b_3indgrp + e$
- Corrects the directional masking characteristic of D-scores
- Includes nonlinear effects
- Accounts for higher-order relationships among the diversity scores for individuals and their associated workgroups
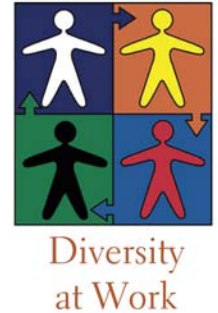
Methodological Challenges
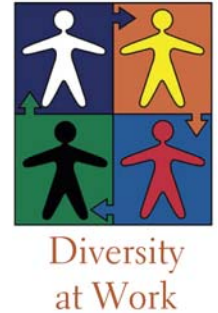
- Research design
  - Cross sectional
  - Longitudinal
- Sampling approaches
  - Random sample
  - Population sample
- Analysis
  - Regression models
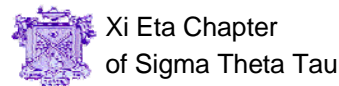 - Latent variable modeling

Conceptual Model

Conclusion

- Approaches provide new avenues of diversity research to understand the effects and results of diversity in organizations

- Diversity is dynamic, relational and context-based

- What questions are we asking?

- What attributes are salient?

Questions and Comments

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