Analyses results:

# Tests:“Is there a significant difference between the groups in touch, needs and affect”?

t-tests

* Appropriate x Condition\*\*\*
  + t = 11.6
  + p < .001
  + d: 1.36 (large)
* Expectation x Condition\*\*\*
  + t = 9.04
  + p < .001
  + d: 1.08 (large)
* Relation2Partner x Condition\*\*\*
  + t = 14.57
  + p < .001
  + d = 1.68 (large)
* Roughness x Condition\*\*\*
  + t = 9.8
  + p < .001
  + d = 1.13 (large)
* Pleasantness x Condition\*\*\*
  + t = 20.52
  + p < .001
  + d = 2.37 (large)
* Intensity x Condition\*\*\*
  + t = 7.10
  + p < .001
  + d = 0.81 (large)
* Comfortable\*\*\*
  + t = 23.66
  + p < .001
  + d = 2.73(large)
* Duration\*\*\*
  + t = 6.15
  + p < .001
  + d = 0.71 (medium)
* Appropriate\*\*\*
  + t = 11.63
  + p < .001
  + d = 1.34 (large)
* Humidity\*\*
  + t = 2.62
  + p = .009
  + d = 0.40 (small)
* Velocity\*\*\*
  + t = -3.84
  + p < .001
  + d = -0.48 (small)
* GrandNeedMean\*\*\*
  + t = 8.38
  + p < .001
  + d = 0.96 (large)
* Autonomy\*\*\*
  + t = 6.13
  + p < .001
  + d = 0.72 (medium)
* Competence\*
  + t = 2.16
  + p = .03
  + d = 0.24
* Relatedness\*\*\*
  + t = 16.95
  + p < .001
  + d = 2.23 (large)
* SelfActualization\*\*\*
  + t = 6.75
  + p < .001
  + d = 0.77 (medium)
* PhysicalThriving\*\*\*
  + t = 7.55
  + p < .001
  + d = 0.87 (large)
* PleasureStimulation\*\*\*
  + t = 5.24
  + p < .001
  + d = 0.60 (medium)
* Security\*\*\*
  + t = 5.63
  + p < .001
  + d = 0.65 (medium)
* SelfEsteem\*\*\*
  + t = 6.13
  + p < .001
  + d = 0.70 (medium)
* Popularity\*\*\*
  + t = 4.63
  + p < .001
  + d = 0.53 (medium)
* PositiveAff\*\*\*
  + t = 11.36
  + p < .001
  + d = 1.31 (large)
* NegativeAff\*\*\*
  + t = -11.19
  + p < .001
  + d = -1.29 (large)
* CompositeAff\*\*\*
  + t = 15.49
  + p < .001
  + d = 1.78 (large)

Answer: **Yes, the groups are significantly different at all measures.**

# Test: “Can needs predict affect?”

* **Negative affect**
* Analyses: Linear regression
  + **GrandNeedMean** = Independent variable
* Results:
  + F(1,298) = 37.69, p < .001, R2 = 0.11, Adjusted R2 = 0.11
  + GNM: β = -0.33, p < .001
* Analysis: Multiple linear regression
  + **Relatedness** + **SelfEsteem** = Independent variables
* Results
  + F(2,297) = 43.31, p < .001, R2 = 0.22, Adjusted R2 = 0.22
  + Relatedness: β = -0.38, p < .001
  + SelfEsteem: β = -0.13, p = .03
* Analysis: Multiple linear regression
  + **Relatedness** = Independent variable
* Results
  + F(1,298) = 81.03, p < .001, R2 = 0.21, Adjusted R2 = 0.21
  + Relatedness: β = -0.46, p < .001
* **Positive affect**
* Analysis: Linear regression
  + **GrandNeedMean** = Independent variable
* Results:
  + F(1,298) = 350, p < .001, R2 = 0.54, Adjusted R2 = 0.53
  + GNM: β = 0.73, p < .001
* Analysis: Linear regression
  + **Relatedness** = independent variable
* Results
  + F(1,298) = 181.1, p < .001, R2 = 0.38, Adjusted R2 = 0.37
  + Relatedness: β = 0.61, p < .001
* Analysis: Multiple linear regression
  + **Relatedness** + **PhysicalThriving** = independent variables
* Results
  + F(2,297) = 132.1, p < .001, R2 = 0.47, Adjusted R2 = 0.46
  + Relatedness: β = 0.36, p < .001
  + PhysicalThriving: β = 0.38, p < .001
* Analysis: Multiple linear regression
  + **Relatedness** + **PhysicalThriving** + **Autonomy** = independent variables
* Results
  + F(3,296) = 102, p < .001, R2 = 0.50, Adjusted R2 = 0.50
  + Relatedness: β = 0.29, p < .001
  + PhysicalThriving: β = 0.24, p < .001
  + Autonomy: β = 0.28, p < .001
* Analysis: Multiple linear regression
  + **Relatedness** + **Autonomy** + **SelfActualization** = independent variables
* Results
  + F(3,296) = 122.7, p < .001, R2 = 0.54, Adjusted R2 = 0.53
  + Relatedness: β = 0.27, p < .001
  + SelfActualization: β = 0.36, p < .001
  + Autonomy: β = 0.20, p < .001
* Analysis: Multiple linear regression
  + **Relatedness** + **GrandNeedMean** = independent variables
* Results
  + F(3,296) = 122.7, p < .001, R2 = 0.55, Adjusted R2 = 0.54
  + Relatedness: β = 0.15, p = .008
  + GNM: β = 0.61, p < .001
* **Composite affect**
* Analysis: Linear regression
  + **GrandNeedMean** = independent variable
* Results
  + F(1,298) = 263.4, p < .001, R2 = 0.46, Adjusted R2 = 0.46
  + GNM: β = 0.68, p < .001
* Analysis: Linear regression
  + **Relatedness** = independent variable
* Results
  + F(1,298) = 245.1, p < .001, R2 = 0.45, Adjusted R2 = 0.44
  + Relatedness: β = 0.67, p < .001
* Analysis: Multiple linear regression
  + **Relatedness** + **Autonomy** = independent variable
* Results
  + F(2,297) = 146, p < .001, R2 = 0.49, Adjusted R2 = 0.48
  + Relatedness: β = 0.51, p < .001
  + Autonomy: β = 0.26, p < .001
* Analysis: Multiple linear regression
  + **Relatedness** + **GrandNeedMean** = independent variable
* Results
  + F(2,297) = 165.6, p < .001, R2 = 0.52, Adjusted R2 = 0.52
  + Relatedness: β = 0.36, p < .001
  + GrandNeedMean: β = 0.41, p < .001

# Test: “Can needs predict affect better than touch?”

* **Positive affect**
* Reduced touch and need model item (based on collinearity and sample considerations)
  + Analysis: Multiple linear regression
    - One for the needs (**Relatedness** + **Competence**)
      * These needs were determined using a Pearson’s correlation and I chose the items with the lowest correlation to the other predictors
    - One for touch (**Roughness** + **Intensity**)
      * These are the physical characteristics of touch items
      * The reason that **Humidity** and **Velocity** were removed is because they limited the number of participants that could be included in the analysis to 152. Because the touch variables were now decreased to 2 items, I removed the most highly correlated need item too, **PleasureStimulation**.
  + Results:
    - Phys Touch model: F(2,297) = 34.76, p < .001, R2 = 0.18, Adjusted R2 = 0.18
      * Roughness: β = 0.34, p < .001
      * Intensity: β = 0.25, p < .001
    - Needs model: F(2,297) = 151.2, p < .001, R2 = 49, Adjusted R2 = 0.50
      * Relatedness: β = 0.59, p < .001
      * Competence: β = 0.23, p < .001
* All relevant touch and need items
  + Analysis: Multiple linear regression
    - One model with all need items -> needs model
      * **Relatedness**, **Autonomy**, **Competence**, **Popularity**, **SelfActualization**, **PhysicalThriving**, **PleasureStimulation**, **SelfEsteem**, **Security**
    - One model with all touch items -> physical touch model
      * **Humidity**, **Velocity**, **Roughness**, **Intensity**
  + Results:
    - Need model: F(9,290) = 45.12, p < .001, , R2 = 0.58, Adjusted R2 = 0.57
      * Relatedness: β = 0.25, p < .001
      * Competence: β = 0.11, p = .04
      * Security: β = -0.17, p = .007
      * SelfActualization: β = 0.21, p = .001
      * PleasureStimulation: β = 0.13, p = .02
    - Phys touch model: F(4,152) = 9.377, p < .001, R2 = 0.19, Adjusted R2 = 0.17
      * Humidity: β = -0.23, p = .002
      * Roughness: β = 0.37, p < .001
      * Intensity: β = 0.28, p < .001
* **Negative affect**
* Reduced touch and need model item
  + Analysis: Multiple linear regression
    - Need model:
      * Relatedness + Competence = predictors
    - Touch model:
      * Roughness + Intensity = predictors
  + Results:
    - Need model: F(2,297) = 40.86, p < .001, R2 = 0.21, Adjusted R2 = 0.21
      * Relatedness: β = -0.47, p < .001
    - Phys touch model: F(2,297) = 23.82, p < .001, R2 = 0.13, Adjusted R2 = 0.13
      * Roughness: β = -0.29, p < .001
      * Intensity: β = -0.20, p < .001
* All relevant touch and need items
  + Analysis: Multiple linear regression
    - One model with all need items -> needs model
      * **Relatedness**, **Autonomy**, **Competence**, **Popularity**, **SelfActualization**, **PhysicalThriving**, **PleasureStimulation**, **SelfEsteem**, **Security**
    - One model with all touch items -> physical touch model
      * **Humidity**, **Velocity**, **Roughness**, **Intensity**
  + Results:
    - Need model: F(9,290) = 11.42, p < .001, R2 = 0.26, Adjusted R2 = 0.23
      * Relatedness: β = -0.45, p < .001
      * SelfEsteem: β = -0.29, p = .001
    - Phys touch model: F(4,152) = 11.44, p < .001, R2 = 0.21, Adjusted R2 = 0.21
      * Velocity: β = -0.18, p = .01
      * Roughness: β = -0.47, p < .001
      * Intensity: β = -0.25, p < .001
* **Composite affect**
* Reduced touch and need model item
  + Analysis: Multiple linear regression
    - Need model:
      * Relatedness + Competence = predictors
    - Touch model:
      * Roughness + Intensity = predictors
  + Results:
    - Need model: F(2,297) = 147.9, p < .001, R2 = 0.49, Adjusted R2 = 0.49
      * Relatedness: β = 0.59, p < .001
      * Competence: β = 0.23, p < .001
    - Phys touch model: F(2,297) = 48.93, p < .001, R2 = 0.24, Adjusted R2 = 0.24
      * Roughness: β = 0.39, p < .001
      * Intensity: β = 0.28, p < .001
* All relevant touch and need items
  + Analysis: Multiple linear regression
    - One model with all need items -> needs model
      * **Relatedness**, **Autonomy**, **Competence**, **Popularity**, **SelfActualization**, **PhysicalThriving**, **PleasureStimulation**, **SelfEsteem**, **Security**
    - One model with all touch items -> physical touch model
      * **Humidity**, **Velocity**, **Roughness**, **Intensity**
  + Results:
    - Need model: F(9,290) = 38.56, p < .001, R2 = 0.54, Adjusted R2 = 0.53
      * Relatedness: β = 0.42, p < .001
      * SelfEsteem: β = 0.22, p = .001
    - Phys touch model: F(4,152) = 15.84, p < .001, R2 = 0.29, Adjusted R2 = 0.27
      * Humidity: β = -0.20, p = .004
      * Roughness: β = .51, p < .001
      * Intensity: β = 0.33, p < .001

# Test: “How does measures of touch characteristics, relation and context vary between conditions?”

Interaction Partner

* A has more closely related interaction partners than B

Relation2Partner

* Corroborates above finding. Int partner more similar to themselves (or overlapping) in A than B. Maybe this is part of the problem – cannot relate to the interaction partner in B?

Roughness

* A participants experienced more soft touches than B.

Pleasantness

* More pleasant for A than B.

Intensity

* More intense for A than B.

Comfortable

* More comfortable for A than B.

Duration

* Longer duration for A than B.

Appropriate

* More appropriate for A than B.

Humidity

* Slightly more humid in A than B.

Velocity

* Higher velocity in B than A.

Expectation

* More expected in A than B.