Abstract
- EST (ecological system theory)
- Studying individuals in ecological contexts
- Traditionally it was thought that the different ecological systems are nested within one another.
  Meaning: The systems are a bunch of layers or contained in each other.
  - Micro- immediate environments,
  - Meso-relationships between microsystems,
  - Exo-link between two settings: one is an immediate setting and the other is one where the person doesn’t play an active role.. like Media and Neighbours,
  - Macro- larger cultural and social context,
  - Chrono- the role of time, e.g. events occurring in a person’s live, sociohistorical context.. like “back in the days out eyes weren’t so glued on our phones. Yeah Susan but now they are and back in the days your eyes were glued onto the newspapers MEANING you also wanted your privacy and couldn’t be bothered to speak with each and everyone.. just saying.

- However, the Neals developed the idea of the systems networked. Meaning, the ecological systems are linked directly or indirectly to others by the direct and indirect social interactions of their participants.

- They, redefined the systems already known to us, such as micro-, meso-, exo-, macro-, chronosystem and applied their theoretical model onto the example of a developing child.

- Their aim was to find a more flexible and precise way to think about EST.

Introduction
- As we know now, the EST was concluded by Bronfenbrenner in 1977-79.

- It tries to explain the origin of an outcome such as the affinity of substance abuse or academic outcomes, which the help of finding predictors or events. (Correlation, Causation, to name a few) and how much each of the ecological systems contribute to these outcomes.

- However, the Neals argued that “each system is defined in terms of the social relationships surrounding a focal individual, and where systems at different levels relate to another in an overlapping but non-nested way.

- To Bronfenbrenner the nearest System to the individual played a more direct role than the systems further away.

  - For instance, the microsystems as thought of by Bronfenbrenner are direct experiences and social interactions. Let’s take family for example.

- Whereas in the mesosystem a parent and teacher might have a meeting about the childs behavior. This doesn’t include the child directly. So, this represents the interaction between two microsystems.

- The exosystem includes interactions that doesn’t include the child but they influence nonetheless. E.g. education policy. The child plays a role and has a direct experience in the classroom AND the policies influence the child’s experience in school.

- Now the Neals made the argument that after Bronfenbrenner the family microsystem is nested inside the educational policy making exosystem but they conclude that is “makes little sense to view the former as a subset of the latter.” The Neals argue that the systems are distinct, where in one the child is contained and the other isn’t.

- Then they went onto the topic of social interactions. As far as I understood, the examples made by Bronfenbrenner haven’t been particularly focused on social interactions, even though his definitions of the meso and microsystem were based on them. Szapocznik and Coatsworth noted in 1999, “that the examination of mesosystems instead typically focuses on the interdependence of functioning across multiple domains in general terms.”
MEANING his research focused on the dependency of the different Mesosystems such as the individual functioning in school vs. the individual functioning at home. And the focus on social interactions is not met.

Ecological systems as networked: A social network model
- Bronfenbrenner oriented his work closely to Simmels.
- And this guy “recognized that when circles/systems are concentrically arranged, participation in the smallest of these… already implies participation in the larger and thus that the forces impacting a person’s development are entirely determined by the smallest circle/system in which he or she participates.”
- His example was a guild or a family determined by trade.
- He then hypothesized that when the circles (ecosystems) are next to each other, the development would be greater, due to their more effective influence. Bronfenbrenner came to the same hypothesis that the development is highly influenced by the amount of variety the individual is exposed to.
- The Neals then present their model by starting off with re-defining the various brought up terms.
  - Starting with setting:
    § For Bronfenbrenner a setting is a place, where social interaction can happen and thus focuses on a primary spatial dimension. (Spatial is the adjective for Space). And the secondary focus is the back-and-forth between people socially interacting
    § But the Neals questioned that, how are these considered primary and secondary when this is about forces of development? A couple can have fights at home or (embarrassingly) in the streets or (even worse) on vacation.
  - These social interactive patterns are THERE despite the space they are in.
  - Now deducing from Bronfenbrenner, these fight between the couples are different social interactions due to the fact they are in a different space.
    § I mean if you cheat on A and A is known to verbally fight after you cheat on her/him, she/he will fight you regardless of you being at home or at the frutaria (I have mastered examples, I know).
    § Thus, couples will likely engage in a common pattern. Okay.. cheating is not common.. well.. Nevermind.
    § (Don’t cheat)
  - So the Neals give us a new definition of “setting”: a setting is a set of people engaged in social interaction, which necessarily occurs in, and is likely affected by the features of, a place. … so both, interactions and the space you’re in, play an important role but the focus is on the social interaction.
  - The neals then reformulate the hypothesis of the original EST being networked, instead of nested by:
    o Observing that the ecological environment is an overlapping arrangement of structures, each directly or indirectly connected to the others by the direct and indirect social interactions of their participants (Same definition as on page 1).
    o This clarifies that patterns of social interaction of each individual with others determine how systems relate to another. It choses to define in terms of patterns of interactions.
  - Figure 2: (That remind me very much of ikigai. Anyone heard of ikigai before? Helpful tool, whenever you’re lost in life.)
  - Well as you can see, the interaction between A and D shows the linking between the two and the setting they originate from. Presenting us a very different and much clearer and precise picture of their interaction.
  - The Neals definition of the Microsystem is parallel to the one Bronfenbrenner used: “A microsystem is a setting-or set of people engaged in social interaction-that includes the focal individual. ->
Microsystem 1 (ABCD) and Microsystem 2 (AEFG) overlap. A third microsystem (3) (ADE) overlaps even both.

- Definition of Mesosystem: A *Mesosystem is a social interaction between participants in different settings that both include the focal individual*. D and E for instance.

- Exosystem: An *exosystem is a setting-or set of people engaged in social interaction-that does not include, but whose participants interact directly or indirectly with, the focal individual*. GHI. This setting doesn’t contain the individual but GHI are directly (G) or indirectly (HI) connected to the individual.

- This approach highlights the networking hypothesis of the Neals. As well as the possibility to consider the ecological environment from the perspective of different focal individuals.

- This also puts emphasis on the specific nature and configuration of ecological systems influencing the development of an individual depends on, must be considered from, the perspective of the focal individual. AEGF is a microsystem for A but an exosystem for C.

- Macrosystem and Chronosystem are not built from setting but rather refer to forces that shape the patterns of social interactions that define settings.

- Macrosystem: *is the set of social patterns that govern the formation and dissolution of social interactions between individuals, and thus the relationship among ecological systems.*

  - The Neals example was homophily, which is the individuals tendency to interact with other who share a social status AND transitivity, which refers to the tendency for two individuals with a common acquaintance to interact as they are brought together in common settings, by common values, or with common goals.

  - These two, homophily and transivity are social network structures surrounding an individual. This is brought up as an argument for the networking structure of the EST.

- Chronosystem: *Chronosystem is the observation that patterns of social interactions between individuals change over time, and that such changes impact the focal individual, both direly and by altering the configuration of ecological systems surrounding him/her.*

**A hypothetical example**

- Bronfenbrenner’s idea: from nearest to most distal system

- EST after the Neals applied their reasoning and their hypothetical model of the networked system:
  - different arrangements came up and the child’s surroundings are clearer and more linked and the focus is different in terms of the people interacting with each other AKA the setting for that individuals differs.

- Figure 3: focuses on actual social interaction patterns instead of expectations. Because the social world is composed of networks and not groups.
  - Here you can clearly see that, when comparing the two models, that for instance the exosystem is not necessarily overlapping with a mesosystem. They can overlap but they don’t have to.
  - In Bronfenbrenners model, the Meso is contained by the Exo though.

- Result: more flexible, closer to reality.

- Homophily is brought up again in the article as the mother and the teacher might share similar values, e.g. that education is important.

- As well as the group of the principal, superintendent and mayor. They have a similar goal/cause and thus have a pattern of transivity.

- Not mentioned in figure 3 are Macro and Chronosystem, due to their unbearable amount of possibilities.
This would burst the whole .. (as I call it) mind-map” but you could definitely look for as many factors as you’d like.

- It does “capture macrosocial phenomena to the extent that their effects are reflected in patterns of individuals social interactions”.
- This is important due to the fact, that you can easily sort out the factors NOT effecting the individuals social interaction and thus not have an impact on their development.

- Chrono: location, relationships, social interactions might shift. Example: toddler – later also student. So the microsystem for the focal Individual changes.

**Future directions for the networked model of EST**

  - Advantages: shifts the focus of attention away from where individuals interact to toward how and with whom they interact, which is essential to the extent that human development is a social process.

  - Secondly is allows researchers to examine more complex relationships among ecological systems, including a multiplicity of different microsystems that only partially overlap, and mesosystems and exosystems that bridge these microsystems.

  - Thirdly, if offers a way to more fully incorporate Bronfenbrenners “recognition that environmental events and conditions outside any immediate setting containing the person can have a profound influence on behavior and development.

  - The networked model provides more theoretically consistent definitions that clearly specify not only what each system if composed of but also how each system is related to the others.

  - Lastly, is moves from the path of theory to method.

**From theory to Method**

  - Possibility of precise tools of social network analysis.
  - Possibilities: Cliques vs. Participating (Class room). Reality.
  - Open for other researchers to make questions and define methods.

**Summary (Conclusion)**

  - With redefining the terms and approach, the networking models seems to paint a more precise picture and actually gives the chance to define methods and open up research by looking at WHO and HOW instead of WHERE, since their approach is based on social interaction.