SOSC2990 - Developmental Psychology

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These are notes I typed in class, so there are probably a lot of typo/mistakes, so keep an eye out for anything that doesn't make sense.

Contents

1 February 05, 2021

1.1 Nature vs. Nurture

The nature vs. nurture debate is one of the key issues in developmental psychology.

Definition 1.1. Nature refers to the inborn propensities of an individual and the biological influences that affect a person's actions/personality. These factors are developed during an individual's maturation.

Definition 1.2. Maturation refers to the unfolding of a genetically programmed sequential pattern of change

Definition 1.3. Nurture refers to learning from environmental experiences, e.g. from the surrounding and

> **Example 1.4**
>
> John Locke's "Empiricism" states that individuals are borne a blank slate, and that individual differences are due to experiences.

1.2 Environmental Factors

1.3 Bronferbrenner's Ecological Theory

1.3.1 Microsystem

The microsystem is the immediate surrounding of the individual, e.g.

- family

- school

- peers

There is a **bidirectional influence** of factors in the microsystem, as the environment can affect the individual, but the individual can also affect the environmental.

> **Example 1.5**
>
> If the child is very obedient, the parents might not be very hard on the child, where as if the child is very rebellious, their parenting style might also be different. Thus, the parents affect the child, but the child also affects the environment.

1.3.2 Mesosystem

The connection and interaction between factors in the microsystem are called
  For example, a child's parent and school do not work in isolation.

1.3.3 Exosystem

Facts in the **exosystem** do not directly affect the child, but it does affect the microsystem. As such, these factors have an indirect impact on the child.

> **Example 1.6**
> One example of a factor in the exosystem is the parents' workplace schedule. Although it does not directly affect the child, it affects the quality of the parent-child interaction, which would in turn affect the child.

1.3.4 Macrosystem

The macrosystem consists of factors related to the culture the child is raised in, for example its:

- values

- customs

- laws

Although they do not directly affect the child, it creates a cascading effect on the other systems and thus affect the child.

1.3.5 Chronosystem

The **chronosystem** refers to the impact of time on the individual's development. e.g. timing of parent's death, or physiological changes in the child's development.

> **Remark 1.7 —** You can think of the ecological theory as an onion, with each layer affecting each other.

Both nature and nurture are important.

Definition 1.8. **Normative influences** are biological or environemntal influences that affect many or most people in similar ways

Normative age-graded changes, e.g. puberty Normative history-graded changes, major historical events
Non-normative influences.

2 February 10th, 2021

2.1 Research Methods

We will cover two different research methods:

- Descriptive Research - we only observe/study the relation of the two variables

- Experimental Research - we actively manipulate one variable to discover the causal relation between two variables

2.2   Descriptive Research - Case Study

Definition 2.1. For a **case study**, we are investigating an individual or a small group of people intensely.

Example 2.2

One example of a case study is that of Genie, the feral child.

Case studies have different advantages and disadvantages.

2.2.1   Advantages

- One key advantage is that we can go deep in investigating the subjects

- Case studies are very flexible, as we can tailor the study or alter the research mid way though.

  Remark 2.3 — Unlike surveys, we can change/alter the research focus during the research process.

  Example 2.4

  For example, initially the researchers were investigating Ginnie's language skills. However, through the research process, they found that her understanding is fundamentally different, and as such, they are interested in how she percieves information.

2.2.2   Disadvantages

- The results of a case study might not be generalizable to the general population, as it is specifically focusing on a small group of people.

- In a case study, we cannot establish cause and effect.

  Example 2.5

  In the case of Ginnie, we don't know if her inability to aquire normal language from here lack of interaction during the critical period, or due to her tramatic experience.

2.3   Naturalistic Observation

Definition 2.6. **Naturalistic observation** is research in which an investigator simply observes some naturally occurring behavior and does not make a change in the situation.

Remark 2.7 — Naturalistic observation can only be used to observe behaviors, and as such, is not suitable for certain research studies.

> **Example 2.8**
>
> We can count the number of times students call out or leave their seats at different ages. There is minimal control over the natural environment. Rather the researcher is just observing the students. See Figure 1.

Date: November 10, 2005   Observer: Judy Jones
Student: Sammy Smith   Age: 8-5   Grade: 3

Target Behaviors

Time Period	Calling Out	Leaving Seat	Off Task
9:00–9:15	××××	××	××××
9:15–9:30	×××	×××	××
9:30–9:45	×××	×××	××
9:45–10:00	×	××	××
2:00–2:15	×××××	×××××	××
2:15–2:30	××××××	××××	×××××××
2:30–2:45	×××××	×××	×××××××
2:45–3:00	××××	××××	×××××××

Calling Out: Specific episodes of interrupting teacher, calling to classmates, making noise, yelling

Leaving Seat: Separate event such as standing without permission, leaving the seat, knees on seat

Off Task: Not doing assigned work (e.g., daydreaming, playing with objects, doing other work)

Figure 1: Observer sheet for a study examining the relationship between age and behavioral problems

When conducting a naturalistic observation, we must consider the following things:

- We must conduct the study objectively. To do this, we must create an observation chart, which calculates/assess the frequency of behaviors.

- We must standardize/define each of the target behaviors.

> **Example 2.9**
>
> In the example above, we can define calling out as: specific episodes of interrupting teacher, calling to classmates, making noise, or yelling.

This will ensure that the study is conducted objectively.

Besides this, we must also consider the following:

- Who and how many people are observing?

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> **Remark 2.10** — Using multiple raters will provide more objective results, as there will be less bias. In addition, we can check for **inter-rater reliability/-consistency**. If we find inconsistency in different ratings, we have to figure out why, e.g. some might be more extreme, or the instruction might not be clear.

If multiple raters have the same results, then we can be more confident that we are capturing the behavior.

> **Remark 2.11** — We might have to reconduct the study until the results align.

- Is the study double blind?

  Definition 2.12. Both the participants and the observers must not know the research objective, i.e. the study have a **double blind design**.

  > **Remark 2.13** — Studies must be double blind to ensure that the participants and the rater do not know the purpose of the study, as that would affect their actions/evaluations.

2.3.1   Advantages

The results of naturalistic observation can usually be generalized to the general population, as people are assumed to behave naturally in their natural environment.

> **Remark 2.14** — This is different from experimental study, where the context or design of the study might be very different from real life.

2.3.2   Disadvantages

- If people know that they are being observed, the participants might deliberately change their behaviors

  > **Example 2.15**
  >
  > If we are studying parent-child interactions and the parents know this, they might change their interactions

  > **Remark 2.16** — Sometimes we want to disguise the observation. However, this is not always the case, as we might need consent from the participants.

- No causal relationships can be drawn.

  > **Example 2.17**
  >
  > In the example, the observations change based on time, with the students displaying more behavior problems in the afternoon. Thus, we might speculate that students' attention span decrease over time. However, this hypothesis cannot be verified from this study.

- Observer bias.

  Definition 2.18. When observing the participants, the observer might have certain bias that will affect their

  > **Example 2.19**
  >
  > In the example before, observers might think that older students are more well behaved, but this will affect how they perceive the students.

  > **Remark 2.20 —** In order to minimize observer bias, we use multiple observers and a double blind study.

2.4   Descriptive Research - Correlational Study

Definition 2.21. **Correlational study** is research in which the relationship between two variables is examined to determine whether they are associated or correlated

> **Example 2.22**
>
> Some variables that can be the subject of correlational study include:
>
> - Age and self-esteem
>
> - High school grades and university GPA
>
> - Time playing on the internet and social network

In a correlational study, there are two objectives:

1. Determine the direction of association among variables

   > **Remark 2.23 —** Whether the two variables are positively or negatively correlated. Positive means they increase together, while negative is opposite.

2. Examine the magnitude of association among variables

   > **Remark 2.24 —** Correlation varies from -1 to 1. The higher the absolute value of correlation, the more they are correlated.

When designing a correlational study, we must make sure that the variables are quantifiable numerically.

Definition 2.25. In order to be used in a correlational study, we must have an **operational definition** of the variable.

> **Remark 2.26 —** The operational definition might change from study to study. For example, if we want to measure the use of internet, we might use hrs/week, or we might investigate more specific usage, e.g. number of time checking social media per

> day.

The general rule of thumb is if the magnitude of correlation is:

- < 0.3: the correlation is weak

- > 0.3 and < 0.7: the correlation is moderate

- > 0.7: the correlation is strong

> **Remark 2.27 —**   Even if the correlation is 0, we cannot say that there is no correlation. The relationship might be non linear. See Figure 2. If the relationship is non-linear, the correlation coefficient cannot capture the relation. Make sure to not jump to conclusion if it is zero.
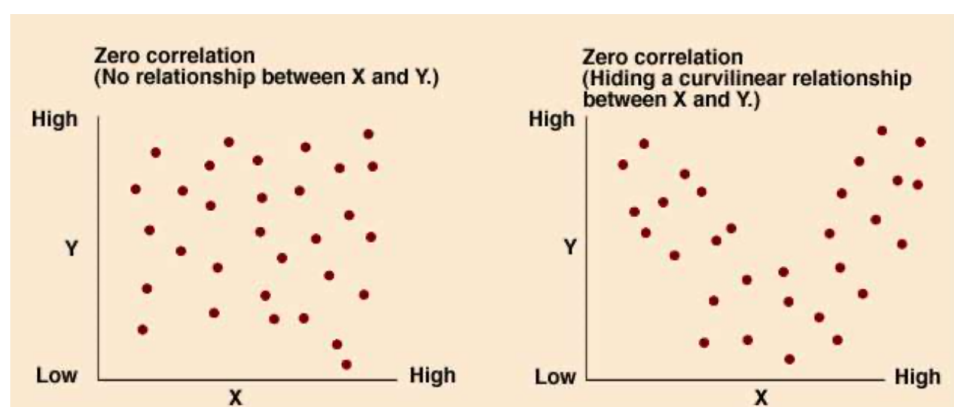

Figure 2: Non-linear correlation, but both have a correlation coefficient of 0

One thing we have to note is that correlation does not imply a causal relationship.

> **Example 2.28**
>
> Imaging you found a correlation (R = -0.6) between time playing on the internet and the number of friends. However, there are a few different interpretations, as can be seen in Figure 3.

Definition 2.29. In Example 2.28, shyness is a **confounding variable**.

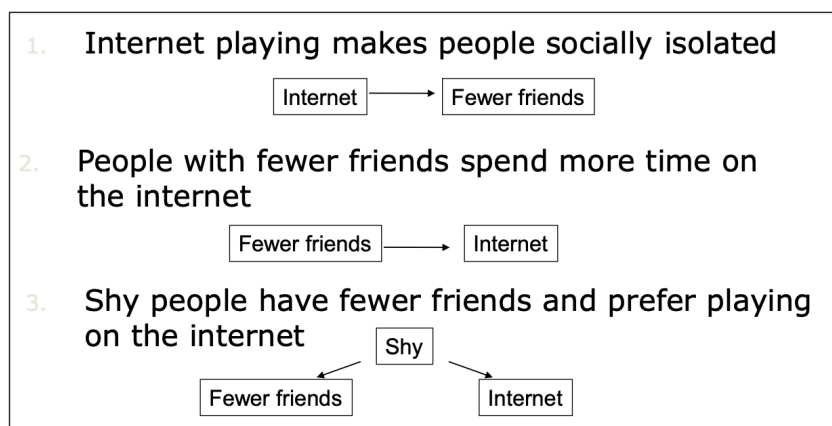> **Remark 2.30 —**   In Example 2.28, the correlation is moderately negative.

Figure 3: Different ways to interpret the correlation

Example 2.31

Other examples of interpreting correlations:

- r=0.5 between show size and vocabulary size. Age is a confounding variable

- r=0.55 between number of bottled water and healthier babies. Family income is a confounding variable.

- r=0.4 between number of fire engines and amount of damage. More damage requires more fire engines.

There are a few takeaways from correlational studies:

- There are three possible interpretation of correlation

- Even if there is a correlation, the variables might not be related. It could be a confounding variable.

2.5   Experimental Research

Definition 2.32. **Experimental research** is research in which we deliberate vary one variable and observe the change in another.

There are two types of variables in experimental research:

- **Independent variable (IV)** - the variable that is being changed

- **Dependent variable (DV)** - the variable that is being observed

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Example 2.33

Consider a study where we want to see the relationship of viewing violent TV and the physical aggression of people. In this case, the variables are:

- IV: Violent TV

- DV: Number of physical fights when playing with friends

In order to carry out the study, we must recruit participants. There must be two conditions:

1. Experimental Condition - Change the IV

2. Control Condition - Do not change the IV

Example 2.34

For Example 2.33, the experimental condition would be exposed to violent TV, while the control group is exposed to non-violent TV.

Remark 2.35 — The control group is important, as it serves as the comparison group. We will see the difference between people who are exposed to the change in IV.

The core logic is that we must ensure that the two groups are identical in all aspect except for the IV. This way we can be sure that the change in the DV is because of the change in the IV.

Example 2.36

If in Example 2.33, if the experimental group was mostly male, but the control group was mostly female, and the experimental group was found to be more physically violent. It could be because they are exposed to violent TV, but it could also be because men are naturally more physical than women.

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3 February 17th, 2021

3.1 Design of Experimental Study

In order to ensure eliminate any pre-existing group differences, we perform **random assignment** to assign the participants to the experimental and control groups. To do this, we can generate a random number to determine how to assign the participants.

3.2 Dialogic Reading Study

One real life example of an experimental study is that of the Whitehurst et al. (1988) dialogic reading study.

Remark 3.1 — Dialogic reading means that the child and the adult have a conversation while reading the book, instead of just being read to.

The study was conducted as follows:

Participants: Middle-class children ages 21 to 35 months and their parents

Experimental group: The parents adopted dialogic reading

Control group: Parents simply read aloud the story

Observation: After 1 month, the parents were tested on their language skills

In this study, the IV is reading method, while the DV is the child's language skills.

> **Remark 3.2 —** After 1 month, the children in the experimental group were 8.5 months ahead of the control group in the level of speech and 6 months ahead in vocabulary. 9 months later, the experimental group was still 6 months ahead of the control group.

The reason why dialogic reading helped to develop the child's language skill because of **PEER**.

P: Prompt - the parent would ask the child about what is in the book

E: Evaluate - the parents will evaluate the response

E: Expand - the parents will expand on the child's response

R: Repeat - the parents would ask the child to repeat afterwards to solidify the expansion

The active participation allows the child to think and to practice their language skills.

3.3   Measuring Developmental Change

To measure developmental changes, there are a few different ways to research changes across a person's lifespan. They are:

- Cross-sectional research

- Longitudinal research

- Sequential research

3.4   Cross-Sectional Research

Definition 3.3. Cross-sectional research is where people from different age groups are studied at the same time point.

One major advantage of cross-sectional research is that it is relatively quick to do. However, it has a few disadvantages, as possible age differences may be due to cohort effect.

Definition 3.4. Cohort effect are variations among individuals who are defined by some shared temporal experience or common life experience.

Example 3.5

Suppose you find that people who are 25 year old perform better than those that are 75 year old in an IQ test. This has two possible explainations:

1. The difference in IQ could be a developmental change.

2. Could be due to cohort effect since the people who are 25 might have a more formal education.

3. Could also because of a difference in nutrition when they were infants.
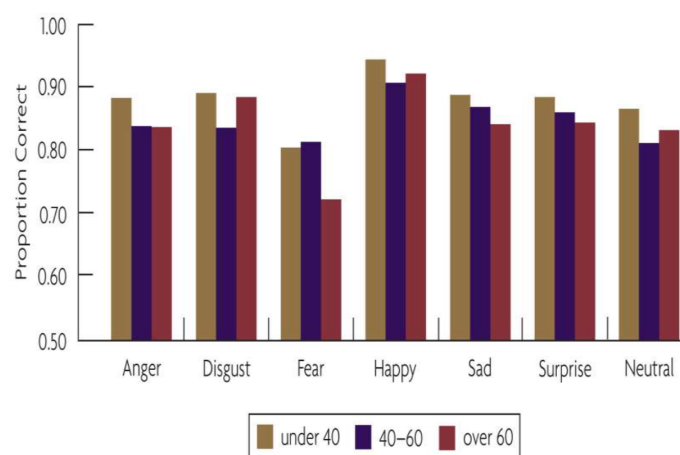
Remark 3.6 —   A cohort effect is a confounding variable.

Figure 4: Example of a cross-sectional study

Example 3.7

Figure 4 shows the result of a cross-sectional study. The study investigated the ability to recognize facial expression. Those over 60 performed worse than those who are younger. However, we don't know if this is due to age differences or because of cohort effect (e.g. education).

3.5   Longitudinal Research

Definition 3.8. In a **longitudinal research** study, the same group of people is traced over time to assess individual change.

Example 3.9

Say we took an IQ test now at age 20. Then we take it again at age 70. This is a longitudinal design, as the same group of people are traced over time.

> **Remark 3.10 —** The major disadvantage of longitudinal design is because it is time consuming. In Example 3.9, it would have taken 50 years to perform the study.
>
> In addition, this increases the chance that the participant would drop out of the study, move away, or pass away. This is called an **attrition problem**. This is an issue, as the samples that remain in the study might be a biased sample. As such, the sample that remain might not be representative of the starting sample, and of course the general population.
>
> Longitudinal design also runs into the problem of the **practice effect**. This is because, if we take the same test over and over, we might perform better because of that.

3.6   Sequential Reserach

Definition 3.11. A sequential research is one where the researchers study a number of different age groups over several points in time.

> **Remark 3.12 —** A sequential design allows researchers to example age change vs. age difference.

> **Example 3.13**
>
> For example, if we study the moral behavior of children, we might use a sequential design. We might recruit children of age 3, 4, and 5. Then, we would perform the study to these three groups over a period of time.
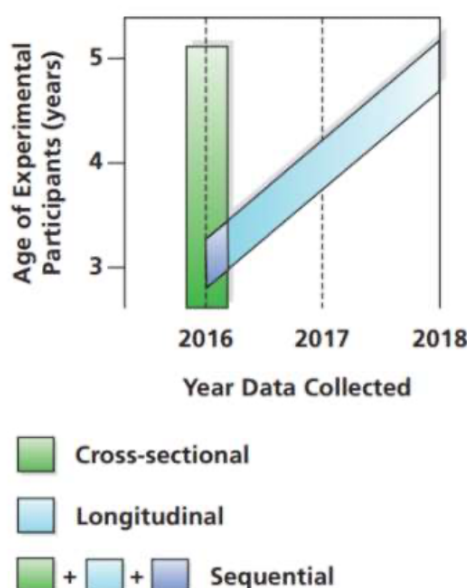

Figure 5: Differences between cross-sectional, longitudinal, and sequential design

3.7   Reading - Chapter 1

//TODO:

3.8   Theories of Development

To start, we must define what a theory is. We will then talk about 5 different theoretical perspectives of development:

1. Psychodynamic perspective

2. Behavioral perspective

3. Cognitive perspective

4. Humanistic perspective

5. Biological perspective

Definition 3.14. A theory refers to the explanations and predictions concerning phenomena of interest. It provides a framework for understanding the relationships among an organized set of facts or principles.

> **Remark 3.15 —** In laymen terms, a theory is a way to explain or predict a phenomenon.

Example 3.16

Say we want to investigate drug use problems. We might develop theories to explain these phenomenons, for example the observational learning theory. We can then study the correlation or causal relation of this theory. We might also be able to use these theories to predict which teenagers will be more susceptible to drug abuse.

Developmental psychology is similar to the blind men describing the elephant metaphor, where different blind men touching the elephant would describe it differently. Similarly, in developmental psychology, we are looking at different aspects of human development, and thus result in different theories.

3.9   Psychodynamic Perspective

Definition 3.17. The **psychodynamic perspective** of developmental psychology says that development is shaped by inner forces, memories, and conflicts.

There are two main theories from the psychodynamic perspective:

- Freud's Psychoanalytic Theory

- Erikson's Psychosocial Theory

3.9.1   Freud's Psychosexual Development Theory

Freud observed a phenomenon (glove anesthesia) in his patients that couldn't be explained by Freud's theory has 3 personality structures:

- Id

- Ego

- Superego

Definition 3.18. The **id** of a person seeks to maximize **libido**, which are sexual instincts or aggressive impulses.

> **Remark 3.19 —** Some of these libido are disturbing in nature or not socially acceptable.

> **Remark 3.20 —** The Id is also called the **pleasure principle**.

Definition 3.21. The **ego** is in charge of gratifying the id that are acceptable to the superego

> **Remark 3.22 —** The ego is also known as the .

> **Remark 3.23 —** We are not born with ego and we develop it when we are around 1 year old. The majority of the ego functions are conscious to us.

Definition 3.24. The **superego** acts as the moral judge of the person and tells us what is right or wrong.

> **Example 3.25**
> The superego considers what is socially acceptable or not.

> **Remark 3.26 —** We are also not born with the superego, but it is develop at age 5-6 through exposure.

In this theory, the ego needs to keep the three components in balance, or else tension would occur.

> **Example 3.27**
> Say your friend asks you to drink before your exam. The id would tell you to go drink, while the superego would tell you do revise. The ego strikes the balance, e.g. study with a reasonable and realistic timetable.

With these three forces, Freud develop a psychosexual development theory. This theory says that:

- Development is fundamentally stage-like, with each stage centered on a particular conflict between sexual urges and demands of society

- The specific personality a child develops depends on the degree of success the child has in moving through the various stages

- Over-indulgence (id) or lack of gratification (superego) results in fixation

  Definition 3.28. Fixations are conflicts or concerns that persist beyond the developmental stage in which they first occur.

  > **Remark 3.29 —** If the ego is able to develop a good balance, then the person develops a healthy personality.

- Sequence of stage is determined by maturation

  - Unvarying sequence across all individuals

This means that during the developmental stage, the ego must strike a good balance between the id and superego. Figure 6 shows the 5 stages of development according to Freud.

> **Remark 3.30 —** Freud's theory generally says that human development revolves around our libido and the unconscious forces to gratify these sexual desires. If we are not able to gratify (or over-indulge), we will

There are quite a few of limitations to Freud's theory:

- Lack of empirical data and verification (libido is unconscious)

- Derivation of the concepts and theories from a limited population (only on upper class Austrian women)

- Freud's theory only considers development until puberty. Development is lifelong and does not stop after adolescence

- Narrow emphasis on sexual drives and neglect other motives

However, Freud's theory did contribute the fact of the importance of unconsciousness in human development.

STAGE		PART OF THE BODY	CONFLICTS/EXPERIENCES	ADULT TRAITS ASSOCIATED WITH PROBLEMS AT THIS STAGE
Oral (birth to 1 year)		Mouth	Weaning Oral gratification from sucking, eating, biting	Optimism, gullibility, dependency, pessimism, passivity, hostility, sarcasm, aggression
Anal (1 to 3 years)		Anus	Toilet training Gratification from expelling and withholding feces	Excessive cleanliness, orderliness, stinginess, messiness, rebelliousness, destructiveness
Phallic (3 to 5 or 6 years)		Genitals	Oedipal conflict Sexual curiosity Masturbation	Flirtatiousness, vanity, promiscuity, pride, chastity
Latency (5 or 6 years to puberty)		None	Period of sexual calm Interest in school, hobbies, same-sex friends	
Genital (from puberty on)		Genitals	Revival of sexual interests Establishment of mature sexual relationships	12

Figure 6: 5 Stages of development according to the Psychosexual theory of development

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