CLIL Textbook

(Content and Language Integrated Learning)



on Psychology

Brian J Birdsell

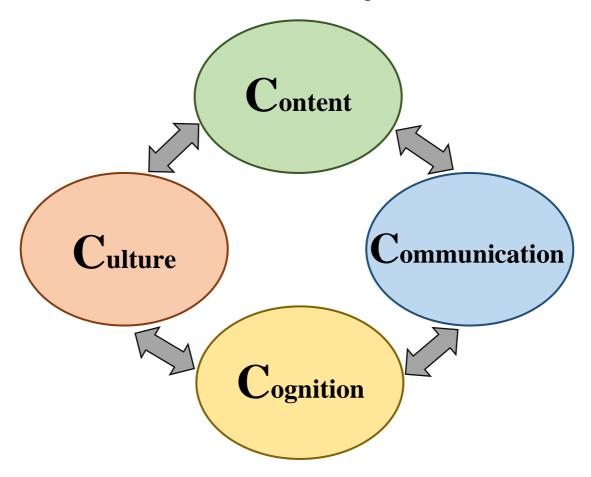
Natusko Tatsuta

Hirosaki University

CLIL stands for "content and language integrated learning".

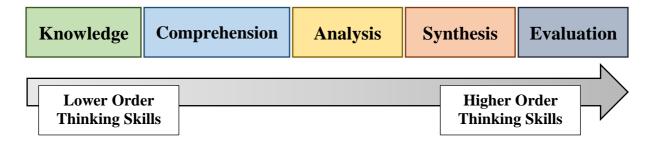
The goal of a CLIL course is to teach a foreign language (e.g., English) through academic content, in this case, Psychology. Therefore, this class has a dual-focus – improving your English skills while learning more about the field of Psychology.

CLIL courses also focus on the following 4 C's:



This book is divided into **3 sections (Growth & Motivation, Cognitive Psychology, and Personality & Social Psychology)**. In each section, there are **3 units,** so we will cover a total of 9 units. We will cover one unit each week. At the end of each section, you will do a short group presentation on a topic related to that section. In each unit, there is a **content module** (the 1st **C**), which introduces the academic material in a short reading passage. You will build up your **knowledge** on a specific topic related to psychology. In addition, you will watch a video related to this topic and then have to summarize it to show that you **comprehend** the material.

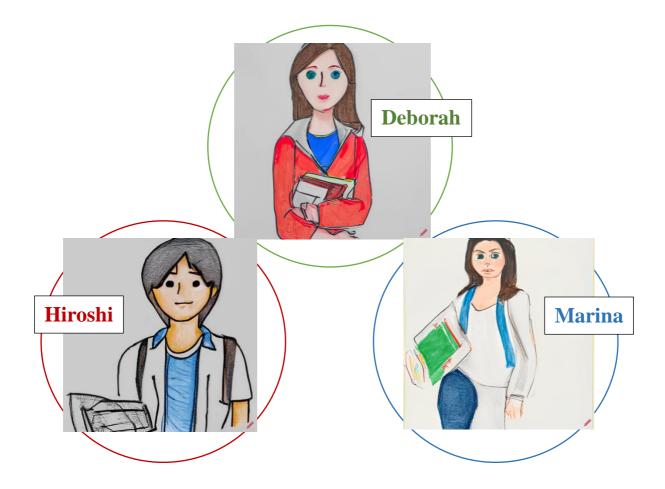
There is also a **communication module** (the 2nd C), which includes both open discussion questions related to the content and a conversation dialogue to practice talking about the content. You will compare and contrast what you have learned in the content module to show that you can **analyze** this new information. In addition, you will compose and produce your own short group presentations on a topic related to the section to show that you can **synthesize** what you have learned. Finally, you will learn to **evaluate** and complete peer reviews of other students' presentations.



Therefore, the third pillar of a CLIL course is to develop your **cognition** (the 3^{rd} **C**), as indicated in the above highlighted words. These are all part of the well-known taxonomy of thinking skills developed by Paul Bloom.

Lastly, the final pillar of CLIL is to develop your knowledge of **culture** (the 4^{th} **C**), which means gaining a deeper understanding of ourselves and other cultures through learning and discussing the material in this textbook.

Throughout the textbook, there are dialogues related to the topic to practice your conversation. There are 3 individuals in these dialogues studying psychology at an international university. Hiroshi is from Hirosaki, JAPAN; Deborah is from Sicily, ITALY; and Marina is from Guadalajara, MEXICO.



The outline of the textbook.

There are 3 sections based on a theme from the field of Psychology and each section has 3 units connected to this theme.

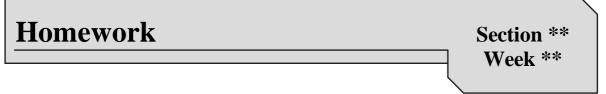
The goal is for you to come to class prepared to talk about the topic, instead of the teacher standing and lecturing for the entire class. That means, each student needs to actively complete the weekly homework assignments before class to become familiar with the topic.

Each unit is divided into the following 4 Headings:

The "green headings" contain a short reading passage on the topic.

Content: Background Reading Section ** Week **

The "grey headings" contain your homework. Each individual in your group will watch a different video and write a short summary of the video and also do some vocabulary exercises.



The "blue headings" are the communication activities. During class, we will do activities to practice English communication. For example, each student will describe to the other students in the group the video from the above homework. This is a jig-saw puzzle – each student helps the other students gain a deeper understanding of the topic. In addition, there are discussion questions and practice dialogues.



Finally, at the end of the 3 weeks, each group will do a short group presentation on a topic they found interesting in that section.



Section ** Week **

Table of Contents

SECTION 1: GROWTH & MOTIVATION	<u>7</u>
UNIT 1: GROWTH THEORIES AND THE HIERARCHY OF NEEDS	8
UNIT 2: MOTIVATION – SELF DETERMINATION THEORY	
UNIT 3: EMOTIONS, LOVE & POSITIVE PSYCHOLOGY	
GROUP PROJECT FOR SECTION 1	
SECTION 2: COGNITIVE PSYCHOLOGY	
UNIT 4: PERCEPTION & GESTALT PSYCHOLOGY	
UNIT 5: MEMORY	49
UNIT 6: CREATIVITY	
GROUP PROJECT FOR SECTION 2	
SECTION 3 PERSONALITY & SOCIAL PSYCHOLOGY	66
UNIT 7: PERSONALITY	67
UNIT 8: SOCIAL PSYCHOLOGY 1	
UNIT 9: SOCIAL PSYCHOLOGY 2	
GROUP PROJECT FOR SECTION 3	
REFERENCES	
ACKNOWLEDGEMENTS	92
OTHER ONLINE RESOURCES	92

(Written in collaboration with openai's ChatGPT - https://chat.openai.com)

Section 1: Growth & Motivation

Unit 1: Growth Theories and the Hierarchy of Needs

Key vocabulary

Tackle 取り組む・立ち向かう	Repertoires レパートリー・ 能力範囲	Resilience レジリエンス:困難から迅速 に回復する能力・タフさがある
Persistence	<u>Setbacks</u>	Predetermined
根気よさ・がんばり・粘り強さ	障害	前もって決められた

Content: Background Reading 1

Section 1 Week 2

The *broaden and build growth theory*, proposed by Barbara Fredrickson, suggests that positive emotions broaden people's thought-action <u>repertoires</u>, which in turn builds their personal resources, allowing them to flourish and grow over time. According to the theory, positive emotions such as joy, interest, contentment, and love, can *broaden* an individual's cognitive, social, and physical resources, which can then be used to <u>tackle</u> new challenges and explore new opportunities. The *build* component of the theory suggests that the development of resources over time can lead to greater <u>resilience</u>, well-being, and personal growth (see Figure 1).

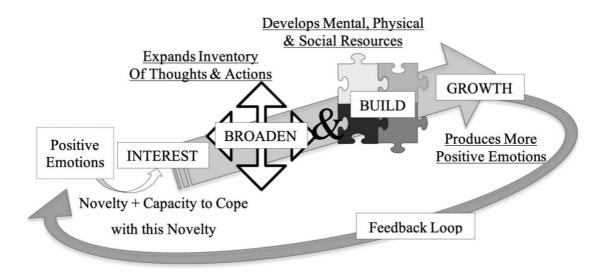


Figure 1: A diagram of the broaden and build growth theory



A related concept to the broaden and build growth theory is *growth mindset*, first introduced by Carol Dweck. This theory argues that individuals who believe that their intelligence, creativity, and abilities can be developed through effort, **persistence**, and learning are more likely to adopt a growth mindset. This mindset fosters a desire to learn and to overcome challenges, leading to greater achievement and success in a variety of domains. In contrast, individuals who hold a *fixed mindset*, believing that their abilities are **predetermined** and unchangeable, are less likely to take risks or engage in challenging activities, and may become discouraged or give up more easily when faced with **setbacks** or obstacles. By promoting a growth mindset in individuals, educators and parents can encourage the development of creativity, resilience, and a lifelong love of learning (see Figure 2).

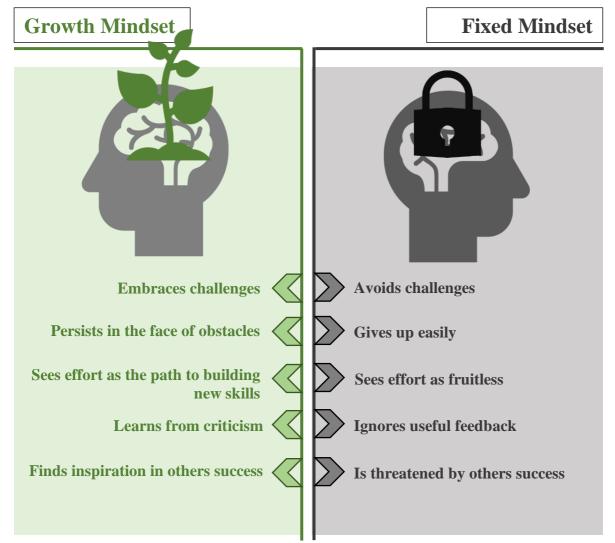


Figure 2: A diagram of growth and fixed mindsets



Key vocabulary

Hierarchy	Physiological	Security	Belonging
階層	生理的	安定	所属感
Esteem	Self-respect	Self-actualization	Potential
尊敬	自尊心	自己実現	潜在能力

Content: Background Reading 2

Section 1 Week 2

Maslow's Hierarchy of Needs is a theory of motivation that was first proposed by psychologist Abraham Maslow in the 1940s. The theory suggests that people have different types of needs that must be met in a certain order, with basic needs taking priority over higher-level needs.

The **<u>hierarchy</u>** is usually depicted as a pyramid (see Figure 3), with the most basic needs at the bottom and the higher-level needs at the top. The five levels of the hierarchy, in order from bottom to top, are:

- 1. **Physiological Needs**: These are the most basic needs that humans have, such as food, water, shelter, and sleep. Without these needs being met, people cannot focus on anything else.
- Safety Needs: Once <u>physiological</u> needs are met, people have a need for safety and <u>security</u>. This includes things like financial security, physical safety, and a sense of stability in life.
- 3. Love and Belonging Needs: After safety needs are met, people have a need for love and <u>belonging</u>. This includes the need for friendship, family, and romantic relationships.
- Esteem Needs: Once love and belonging needs are met, people have a need for <u>esteem</u>. This includes the need for <u>self-respect</u>, the respect of others, and the feeling of being valued and important.
- 5. **Self-Actualization Needs**: At the top of the pyramid are <u>self-actualization</u> needs. This includes the need for personal growth and fulfillment, creativity, and realizing one's <u>potential</u>.

Maslow's theory suggests that people must have their basic needs met before they can focus on higher-level needs. However, it's important to note that not everyone will have the same needs, and some people may be able to focus on higher-level needs even if their basic needs are not fully met. Additionally, people may move up and down the hierarchy depending on their circumstances and life events.

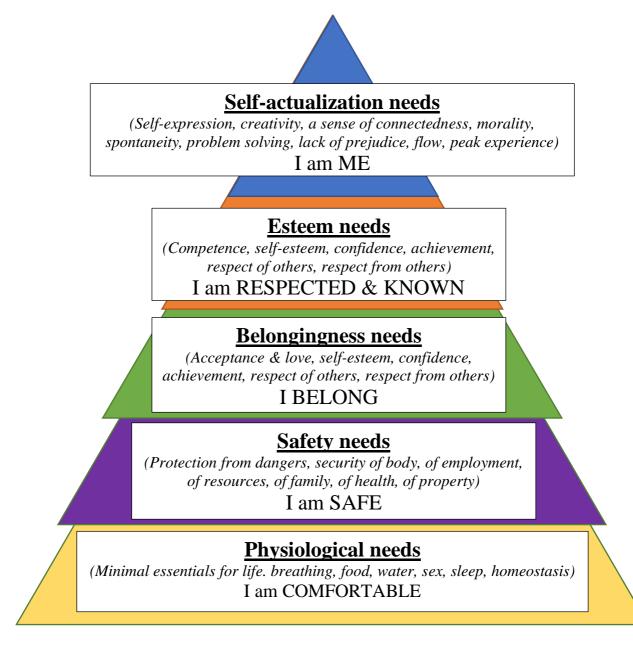


Figure 3: Maslow's Hierarchy of Needs

Content: Background Reading 3

Section 1 Week 2

In the 1970s, Mihaly Csikszentmihalyi embarked upon one of the largest psychological surveys ever, traveling around the world asking people about the times in their life when they felt their best and performed their best. If you were asked to be part of this survey, how would you respond? When do you feel your best?

From this research, he published a book called "**Flow**". This is now the term used by researchers to talk about optimal states of consciousness. One might call this a "peak experience", where one is totally absorbed in that moment (e.g., doing a sport, learning something, painting, etc.) and the sense of self vanishes, and time flies by. Flow occurs when the challenge of the task meets the skill sets of the individual. For example, if the challenge is high and the skills are low, then the individual will experience anxiety and worry. In contrast, if the challenge is low and the skills that the individual possesses are high, then the individual will experience relaxation and boredom. The flow state is when the challenges and skills are in an optimal state for the person to excel at the task (see Figure 4).

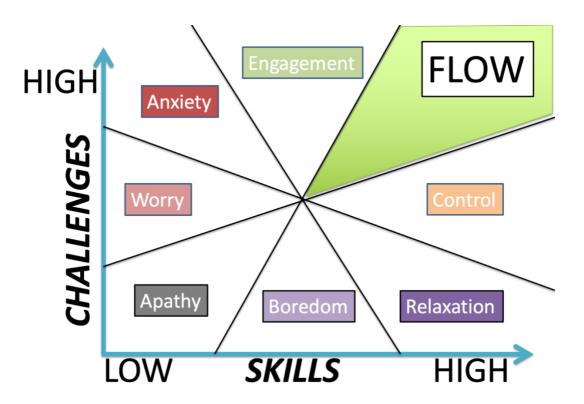


Figure 4: Csikszentmihalyi's diagram of peak experiences called "Flow"



Section 1 Week 2

At home: Watch the short video that you were assigned.

1	Sprouts: Maslow's Hierarchy of Needs			
-	https://www.youtube.com/watch?v=O-4ithG_07Q			
2	The School of Life: Why Maslow's Hierarchy Of Needs Matters			
_	https://www.youtube.com/watch?v=L0PKWTta7lU			
3	Khan Academy: Maslow's hierarchy of needs			
J	https://www.youtube.com/watch?v=P6PEf9WtEvs			

Then, write a 100-word summary of the video. Be prepared to come to class and share this summary with your group members.

Vocabulary Exercises

(1) Fill in the blank:

- 1. Despite several ______, the athlete remained focused on his goal.
- 2. In order to ______ the problem, we need to approach it from a different angle.
- 3. The musician has an impressive ______ of songs from different genres.

(2) Match the word with its definition:

- a. Resilience
- b. Setbacks
- c. Persistence

_____ Continuing to work towards a goal despite challenges.

_____ The ability to bounce back after difficult situations.

_____ Obstacles or problems that prevent progress.

(3) Translate the following words into Japanese:

- a. Tackle _____
- b. Repertoires _____
- c. Resilience _____
- d. Persistence _____
- e. Setbacks _____
- f. Predetermined _____

(4) Match the word with its synonym:

- a. Setbacks
- b. Tackle
- c. Resilience
- d. Predetermined
- e. Repertoires
- f. Persistence
 - _____ Flexibility
 - ____ Overcome
 - _____ Collection
 - _____ Determination
 - ____ Obstacles
 - _____ Prearranged

(5) Match the word with its definition:

- _____ Hierarchy
- _____ Physiological
- _____ Security
- _____ Belonging
- _____Esteem
- _____ Self-respect
- _____ Self-actualization
- _____ Potential
- a. the need to feel good about oneself and one's abilities
- b. the need to fulfill one's potential and achieve self-fulfillment
- c. the need for basic physical needs such as food, water, and shelter
- d. the need for respect and recognition from others
- e. the need for a sense of belonging and acceptance in a group
- f. the need for love and affection from others
- g. the capacity to develop into something in the future
- h. the need for safety and protection from harm

<u>Open-ended questions</u> to think about before class (Use as discussion topics)

- (1) *Maslow's Hierarchy of Needs* posits that individuals have a range of needs that must be met in order to achieve self-actualization. What are some of the practical implications of this theory for everyday life? Can you think of any examples of how people might act differently based on which level of the hierarchy they are currently focused on?
- (2) *Flow Theory* suggests that when we are deeply engaged in an activity, time seems to fly by and we experience a sense of total immersion and focus. What are some of the conditions that are necessary to achieve a state of flow? Can you think of any examples of when you have experienced flow in your own life? How did it feel?
- (3) *Growth Mindset*, as developed by Carol Dweck, suggests that individuals who believe that their abilities can be developed through hard work and dedication are more likely to achieve success than those who believe that their abilities are fixed. What are some of the potential benefits of adopting a growth mindset? How might it help individuals in different areas of their lives? Can you think of any strategies for cultivating a growth mindset?

Communication Activities

Section 1 Week 2

In class: Go around in a circle and have each student share his/her summary. Listen carefully to the other students' summaries. Then consider similarities and differences.

Similarities	Differences	

In class: Choose one of the needs and discuss what would happen if this need was not fulfilled. Then discuss how one can fulfill each of these needs.

Need	Not fulfilled	How one can fulfill this need?
Physiological needs		
Safety needs		
Belonging needs		
Self-esteem needs		
Self-actualization		

Discuss your thoughts on the **<u>open-ended questions</u>** in the **homework section.**

Conversation Practice

In the following conversation, 3 students are discussing human needs and growth theories. Practice the dialogue with your group members.

Marina: Hey guys, have you heard about the growth mindset theory?

Hiroshi: Yes, I have. It's the belief that we can develop our abilities through hard work and dedication.

Deborah: I totally agree. I think it's an essential mindset to have, especially when facing challenges.

Marina: Exactly, and it's also related to the concept of flow, where we are fully immersed in an activity and lose track of time. Have you ever experienced that?

Hiroshi: Yes, I have. When I'm painting or playing an instrument, I can spend hours without even realizing it.

Deborah: Same here. It's such a fulfilling feeling when we're in the zone.

Marina: And both of these concepts tie into Maslow's hierarchy of needs, where self-actualization is the ultimate goal.

Hiroshi: Yeah, self-actualization is about reaching our full potential and being the best version of ourselves.

Deborah: And it all starts with having a growth mindset, seeking challenges, and pushing ourselves out of our comfort zones.

Marina: Absolutely. And when we're in the flow, we're more likely to reach that self-actualization level.

Hiroshi: It's amazing how these theories all interconnect.

Deborah: I agree. It's fascinating to see how they all work together to help us reach our full potential.

Marina: That's why I like to study psychology. We can learn so much about ourselves and how to become better versions of ourselves.

Hiroshi: I couldn't agree more.

Now try to produce your own dialogue about the topic of human needs and growth theories.

Unit 2: Motivation – Self Determination Theory

Key vocabulary

Self-Determination	Autonomy	Competence	Relatedness
自己決定	自律性	能力	関連性
Innate	Intrinsic motivation	Extrinsic motivation	Sustainable
生まれつき・本質的な	内発的動機付け	外発的動機付け	持続可能性な

Content: Background Reading

Section 1 Week 3

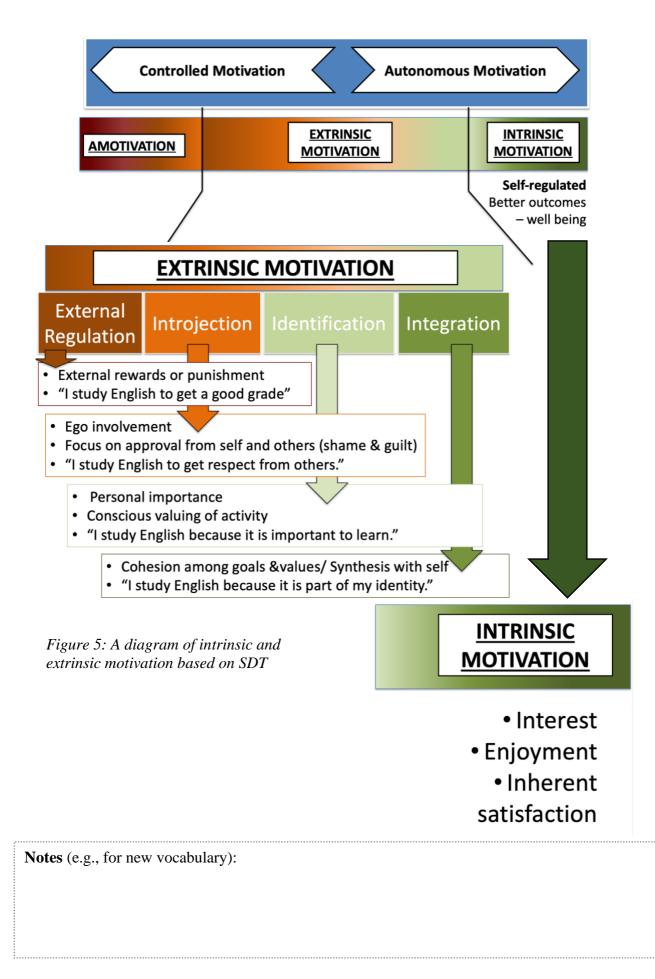
<u>Self-Determination</u> Theory (SDT) is a theory of human motivation that was developed by psychologists Edward Deci and Richard Ryan in the 1980s. The theory proposes that there are three <u>innate</u> psychological needs that must be satisfied for individuals to be motivated: autonomy, competence, and relatedness.

- <u>Autonomy</u> refers to the need to have a sense of control over one's actions and environment. When people feel that they have the ability to make choices that align with their interests and values, they are more likely to be motivated to engage in an activity.
- <u>**Competence**</u> refers to the need to feel capable and effective in one's actions. When people believe that they have the skills and abilities necessary to perform well in a task, they are more likely to be motivated to engage in that task.
- <u>**Relatedness**</u> refers to the need to feel a sense of connection to others and to experience positive interactions with them. When people feel that they are part of a supportive community and have positive relationships with others, they are more likely to be motivated to engage in activities with that community.

According to SDT, the satisfaction of these three needs is essential for **intrinsic motivation**, which is the motivation that comes from within an individual rather than from external rewards or pressures. Intrinsic motivation is characterized by feelings of enjoyment, interest, and engagement in an activity, and it is associated with better performance and persistence.

In contrast, <u>extrinsic motivation</u> is driven by external factors such as rewards, punishments, or social pressure. Although extrinsic motivation can sometimes be effective in getting people to engage in an activity, it is not as <u>sustainable</u> or satisfying as intrinsic motivation.

Figure 4 provides a diagram of motivation on a continuum from amotivation (or having no motivation) to different types of extrinsic motivation to intrinsic motivation, which is when the individual performs a task out of sheer enjoyment and pleasure. It is this type of motivation that leads to better outcomes and sustained performance over time. SDT has been applied to a wide range of contexts, including education, healthcare, sports, and work. It argues that environments that support the satisfaction of autonomy, competence, and relatedness are more likely to foster intrinsic motivation and positive outcomes.



Homework

Section 1 Week 3

At home: Watch the short video that you were assigned.

1	Sprouts: Self-determination Theory
	https://www.youtube.com/watch?v=_juPDoa3GBY&t=157s
2	Sprouts: Extrinsic vs Intrinsic Motivation
-	https://www.youtube.com/watch?v=HLiasZwWTjA
3	Ted: Cultivating Intrinsic Motivation and Creativity in the Classroom Beth Hennessey
J	https://www.youtube.com/watch?v=v2eRnhBvI_I&list=RDQMcMUaNIVSHMo&index=18

Then, write a 100-word summary of the video. Be prepared to come to class and share this summary with your group members.

Vocabulary Exercises

Fill in the blank:

- (1) Developing new skills can increase a person's sense of ______
- (2) Being able to connect with others on a personal level is an important aspect of
- (3) Doing an activity because you enjoy it is an example of _____ motivation.
- (4) Completing a task to receive a reward is an example of ______ motivation.

(5) The ______ drive for social connection is a basic human need.

Match the term to its definition:

____Intrinsic motivation

_____Self-determination

- Sustainable
- ____Autonomy
- _____Relatedness
- ____Innate
- ____Competence
- ____Extrinsic motivation

Definitions:

- a. The ability to make choices based on one's values and interests.
- b. The natural internal drive for certain needs, such as food, water, and shelter.
- c. The ability to connect with others on a personal level.
- d. Having a sense of control over one's actions and environment.
- e. The desire to engage in an activity for its own sake, rather than for an external reward.
- f. The desire to engage in an activity for external rewards or to avoid punishment.
- g. The ability to make choices based on one's own values and interests.
- h. Creating a future that meets the needs of the present without compromising the ability of future generations to meet their own needs.

<u>Open-ended questions</u> to think about before class (Use as discussion topics)

- (1) What are some potential drawbacks of relying on extrinsic motivation for our behavior?
- (2) How do feelings of competence impact our self-esteem and overall well-being?
- (3) How can autonomy support in educational and work settings enhance individuals' motivation and performance?
- (4) What is the role of relatedness in motivation and well-being, and how can it be fostered in various contexts like English as a foreign language?
- (5) How do cultural and social contexts shape individuals' motivation and selfdetermination?

Communication Activities

Section 1 Week 3

In class: Go around in a circle and have each student share his/her summary. Listen carefully to the other students' summaries. Then consider similarities and differences.

Similarities	Differences

In class: Think specifically within the context of learning English as a foreign language. What happens if these basic needs are not fulfilled? Do you think there could be a 4th need?

Need	Not fulfilled	How can one fulfill this need?
Autonomy		
Relatedness		
Competence		
What might a fourth n	eed be?	<u>.</u>

Discuss your thoughts on the **<u>open-ended questions</u>** in the **homework section.**

Conversation Practice

In the following conversation, 3 students are discussing motivation. Practice the dialogue with your group members.

Marina: Good morning, everyone! I am leading the class discussion today, so let's talk about motivation. Can anyone tell me what motivation is?

Hiroshi: Motivation is what drives us to do things, right?

- Marina: That's right, Hiroshi. Motivation is the reason why we do the things we do. Can you give me an example of something that motivates you?
- **Deborah**: Grades motivate me to study. I want to get good grades so that I can get into a good university.

Marina: That's a great example, Deborah. So, what are the different types of motivation?

Hiroshi: There's intrinsic motivation and extrinsic motivation.

Marina: Excellent, Hiroshi. Intrinsic motivation is when you do something because you enjoy it or find it personally fulfilling. Extrinsic motivation is when you do something because you want to earn a reward or avoid a punishment. Can anyone give me an example of each type of motivation?

Deborah: Playing sports for fun is an example of intrinsic motivation.

Hiroshi: And studying for a test to get a good grade is an example of extrinsic motivation.

Marina: Perfect. Now, let's talk about some of the theories of motivation. One of the most famous theories is Maslow's Hierarchy of Needs. Can anyone tell me what that is?

Deborah: It's a theory that says that people have different needs, and that those needs have to be met in a certain order.

Marina: Exactly. Maslow's hierarchy of needs suggests that people have basic needs like food and shelter that have to be met before they can move on to higher level needs like love and self-actualization. Any questions about that?

(Student raises hand)

Marina: Yes, Hiroshi?

Hiroshi: What happens if someone's basic needs aren't met?

Marina: That's a great question. If someone's basic needs aren't met, it can be difficult for them to focus on anything else. They might be too worried about finding food and shelter to think about higher level needs. However, it's important to note that everyone is different, and some people might be able to focus on higher level needs even if their basic needs aren't met.

- **Deborah**: So, how would you explain <u>Self-Determination Theory</u> to someone in a very simple way?
- Marina: Self-determination theory is another popular theory of motivation. It suggests that people have three basic needs that must be satisfied in order to be motivated: autonomy, competence, and relatedness.

Hiroshi: What do those terms mean?

- Marina: Autonomy is the need to have control over your own life and decisions. Competence is the need to feel capable and effective in what you're doing. And relatedness is the need to feel connected to others and have meaningful relationships.
- **Hiroshi**: That's interesting. Can you give us an example of how self-determination theory works in real life?
- Marina: Sure. Let's say you're working on a group project for class. If you feel like you have some control over how the project is done, you're more likely to feel motivated to work on it. If you feel like you're good at what you're doing and making progress, you'll also be more motivated. And if you feel like you're working with a group of people you respect and enjoy being around, you'll be even more motivated.
- **Deborah**: That makes sense. So, if we want to be motivated to do something, we need to have autonomy, competence, and relatedness?
- Marina: Yes, exactly. And the more you have of each of those things, the more motivated you're likely to be. It's important to note that everyone has different needs and what motivates one person may not motivate another. But understanding self-determination theory can help us create environments that are more likely to foster motivation in ourselves and others.

Hiroshi: Thank you for explaining that.

Marina: You're welcome, Hiroshi. And with that, our class discussion is officially over for today!

Now try to produce your own dialogue about the topic of motivation.

Unit 3: Emotions, Love & Positive Psychology

Key vocabulary

Disgust	Contempt	Shame	Guilt
嫌気	軽蔑	恥	後ろめたい
Infants	Physiological	Simultaneously	Genuine
幼児	生理的な	同時に	本物の

Content: Background Reading 1

Section 1 Week 4

The study of emotions has a rich history in psychology, with researchers such as Carroll Izard and Paul Ekman making significant contributions to the field. Izard developed a theory of emotion called the *Differential Emotions Theory* (DET), which argues that there are 10 basic emotions that are universal across cultures and have evolved to help humans survive and thrive. These emotions include enjoyment, interest, surprise, sadness, anger, <u>disgust</u>, <u>contempt</u>, <u>shame</u>/shyness, <u>guilt</u>, and fear. Izard also developed a coding system for measuring emotions in <u>infants</u> and young children, which has been widely used in research on child development. Izard developed the differential emotions scale consisting of 30-items with 3-items each loading onto one of the above 10 factors.

Facto	Factor 3-Items			
Ι.	Interest	• Attentive	• Concentrating	• Alert
II.	Enjoyment	• Delighted	• Нарру	• Joyful
III.	Surprise	• Surprise	• Amazed	• Astonished
IV.	Sadness	• Downhearted	• Sad	• Discouraged
V.	Anger	• Enraged	• Angry	• Mad
VI.	Disgust	• Feeling of distaste	• Disgusted	• Feeling revulsion
VII.	Contempt	• Contemptuous	• Scornful	• Disdainful
VIII.	Fear	• Scared	• Fearful	• Afraid
IX.	Shame/shyness	• Sheepish	• Bashful	• Shy
Х.	Guilt	• Repentant	• Guilty	• Blameworthy

Paul Ekman, on the other hand, is known for his work on facial expressions of emotion. He found that certain facial expressions, such as a **genuine** smile or a look of disgust, are universal and can be easily recognized by people from different cultures. (Look at Figure 6 can you describe the emotions simply from the facial expressions?).



Figure 6: Facial expressions for different emotions

In addition to these researchers, many others have contributed to our understanding of the psychology of emotions. For example, the *James-Lange theory of emotion* proposes that we experience emotions as a result of physiological changes in the body, whereas the *Cannon-Bard theory* suggests that emotions and physiological changes occur <u>simultaneously</u>.

Lisa Feldman Barrett has been a prominent critic of the universality and categorical nature of emotions proposed by Izard and Ekman. She argues that emotions are not universal or biologically determined, but instead are culturally and socially constructed. For example, the emotion of happiness is associated with the facial expression, smiling, but there is no single obligatory expression for happiness.

Barrett's theory, known as the *theory of constructed emotion*, asserts that emotions are constructed from a combination of basic affective ingredients such as valence, arousal, and motivational relevance, which are combined with sensory and contextual information. In other words, emotions are not predetermined, but rather are constructed on the spot based on the individual's perception of the situation.

She argues that emotions are not discrete entities that are hard-wired into the brain. Instead, emotions are constructed by the brain through a combination of various factors, including past experiences, current context, and learned associations. According to Barrett, emotions are constructed through a process that involves making meaning of internal and external sensations, categorizing those sensations, and then using those categories to label emotions. This process is influenced by a person's culture, language, beliefs, and experiences. For example, what if a language does not have a word for a specific emotion. English does not have a word for the German emotion "schadenfreude" – which means the pleasure derived from another's misfortune.

Barrett argues that the traditional view of emotions, which is based on the idea that emotions are universal, biologically determined, and associated with specific facial expressions and physiological responses, is incomplete. Instead, she suggests that emotions are much more complex and that they vary across individuals and cultures.

Key vocabulary

Companionate	Consummate	Oxytocin
仲間	完全な	オキシトシン
Infatuation	Fatuous	Attachment
心酔・夢中	愚かな	愛着

Content: Background Reading 2

Section 1 Week 4

Love is a complex and multifaceted emotion that has been extensively studied in the field of psychology. Researchers have investigated various aspects of love, including its physiological, psychological, and social correlates, as well as the different types of love that individuals experience.

One popular theory of love is the triangular theory of love, proposed by psychologist Robert Sternberg. According to this theory, love is composed of three components: intimacy, passion, and commitment (see Figure 3). Different combinations of these components result in different types of love, such as romantic love, <u>companionate</u> love, and <u>consummate</u> love.

Other researchers have focused on the physiological responses that occur when individuals are in love. Studies have found that being in love is associated with increased levels of the hormone **<u>oxytocin</u>**, which is involved in social bonding and **<u>attachment</u>**. Love has also been linked to changes in brain activity, particularly in areas associated with reward, motivation, and emotion.

Social factors also play a role in love, with research suggesting that cultural and societal norms can influence the way individuals experience and express love. For example, some cultures place a greater emphasis on familial love or love for the community, while others prioritize romantic love.

Overall, the psychology literature on love provides valuable insights into the complex and multifaceted nature of this emotion. Understanding the different components and types of love, as well as the physiological and social factors that influence it, can help individuals navigate their own experiences of love and build stronger, healthier relationships.

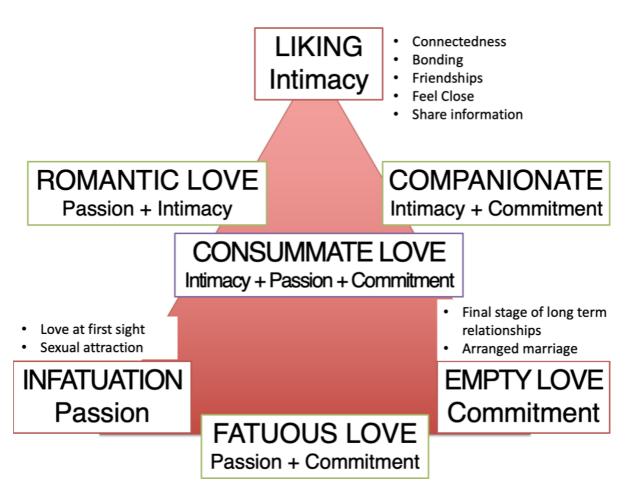


Figure 7: Robert Sternberg's Triangular Theory of Love

Key vocabulary

Flourishing	Absorbed	Bounce back from adversity
活躍する	没頭する	逆境を跳ね返す
Sense of Purpose	Cope with stress	Optimism
生きがい	ストレスに対処する	楽観的

Content: Background Reading 3

Section 1 Week 4

Positive psychology is a relatively new field within psychology that focuses on studying the positive aspects of human behavior, such as happiness, well-being, and <u>flourishing</u>. Researchers in this field seek to understand the factors that contribute to positive outcomes, and to develop interventions that can enhance individuals' lives.

One of the key concepts in positive psychology is the notion of "flow," or the state of being completely **absorbed** in an activity that is challenging but not overwhelming. Researchers have found that experiencing flow is associated with increased happiness and well-being, and that individuals who engage in activities that promote flow tend to report greater satisfaction with their lives.

Another important concept in positive psychology is resilience, or the ability to **<u>bounce back</u>** <u>**from adversity**</u>. Researchers have studied the factors that contribute to resilience, such as social support, <u>**optimism**</u>, and a <u>**sense of purpose**</u>, and have developed interventions to help individuals build their resilience and <u>**cope with stress**</u>.

Positive psychology interventions have also been developed to promote happiness and wellbeing. These interventions can take many forms, such as gratitude exercises, mindfulness meditation, and acts of kindness. Studies have found that these interventions can be effective in enhancing individuals' happiness and well-being, and that the effects can be long-lasting.

Overall, the psychology literature on positive psychology provides valuable insights into the factors that contribute to happiness, well-being, and flourishing. By studying these positive aspects of human behavior, researchers have developed interventions that can help individuals lead more fulfilling and meaningful lives.

Homework

Section 1 Week 4

At home: Watch the short video that you were assigned.

1	Test Prep Gurus: What is Positive Psychology?	
-	https://www.youtube.com/watch?v=1qJvS8v0TTI	
2	Psych2Go: Sternberg's Theory of Love: Intimacy, Commitment, Passion	
-	https://www.youtube.com/watch?v=-Cxq7ZmnFLU	
3	Ted: Are there universal expressions of emotion? - Sophie Zadeh	
v	https://www.youtube.com/watch?v=-hr58Yu0yDs	

Then, write a 100-word summary of the video. Be prepared to come to class and share this summary with your group members.

Vocabulary Exercises

Match the word to the definition:

- a) Disgust
- b) Guilt
- c) Physiological
- d) Simultaneously
- e) Companionate
- f) Infatuation
- g) Attachment
- h) Flourishing
- i) Absorbed
- j) Optimism
- k) Bounce back from adversity
- l) Sense of Purpose
 - _____ A feeling of responsibility or remorse for a wrongdoing.
 - _____ Relating to the physical and biological processes in the body.
 - _____ At the same time.
 - _____ The ability to recover quickly from difficulties.
 - _____ A feeling of disrespect or scorn towards someone or something.
 - _____ A sense of direction, meaning or significance in life.
 - _____ Thriving or growing in a positive way.
 - _____ Love characterized by intimacy and commitment, but lacking in passion.
 - _____ A strong feeling of attraction or obsession towards someone.
 - _____ Fully engaged in an activity or task.
 - _____ The belief that things will turn out well or that good things will happen.
 - _____ A feeling of strong dislike or revulsion towards something.

Open-ended questions to think about before class (Use as discussion topics)

- (1) Can you describe the different types of love and how they influence relationships? What are some of the challenges of "love" for your generation?
- (2) How can we develop a more positive outlook on life and become more optimistic? Why do you think it is important to study Positive Psychology, especially now?
- (3) Describe an experience when you felt angry. What triggered this emotion? How did your body react? How do different emotions impact our behavior and decision-making?

Communication Activities

Section 1 Week 4

In class: Go around in a circle and have each student share his/her summary. Listen carefully to the other students' summaries and take notes below.

Summary 1	Summary 2

Discuss your thoughts on the **<u>open-ended questions</u>** in the **homework section.**

Conversation 1

In the following conversation, 3 students are discussing human emotions. Practice the dialogue with your group members.

Hiroshi: Hey guys, have you ever wondered why we experience emotions like happiness and sadness?

Deborah: Yeah, I have. I think emotions are a way for our brains to communicate with us about what is going on around us.

Hiroshi: I agree. I think emotions are a way for us to respond to different situations and to communicate with others.

Marina: That's interesting. Have you guys heard of Paul Ekman? He's a psychologist who has done a lot of research on emotions and facial expressions.

Deborah: Yeah, I've heard of him. He's the guy who came up with the idea that facial expressions are universal, right?

Hiroshi: That's right. He identified six basic emotions that are expressed through facial expressions: happiness, sadness, anger, fear, surprise, and disgust.

Marina: I think it's really fascinating how emotions can be communicated through nonverbal cues like facial expressions.

Deborah: Definitely. It's also interesting to think about how our emotions can affect our behavior and our interactions with others.

Hiroshi: Yeah, and I think that's why it's important to be aware of our own emotions and to develop emotional intelligence.

Marina: That's a good point. Understanding our emotions and how to regulate them can help us navigate difficult situations and build stronger relationships with others.

Deborah: Exactly. I think that's why studying emotions is so important in psychology. It can help us understand ourselves and others better, and ultimately lead to greater well-being and happiness.

Conversation 2

In the following conversation, 3 students are discussing the psychology of love. Practice the dialogue with your group members.

Deborah: Hey guys, have you ever thought about what love really is?

Hiroshi: Of course, everyone thinks about love at some point in their lives. But it's hard to define what love really is.

Marina: Yeah, that's true. Love means different things to different people. For some, it's about physical attraction, for others it's about emotional connection, and for some it's a combination of both.

Deborah: I agree. Love is such a complex emotion. There's no one-size-fits-all definition.

Hiroshi: That's why psychologists have been studying love for years. They've come up with different theories and models to try and explain what love really is.

Marina: I've heard of Sternberg's Triangular Theory of Love. It suggests that love is made up of three components: intimacy, passion, and commitment.

Deborah: Yeah, I've heard of that too. It makes sense, because all three components are important in a long-lasting relationship.

Hiroshi: I think it's also interesting to think about how love changes over time. The intense passion of a new relationship might not last forever, but the intimacy and commitment can deepen and grow stronger over time.

Marina: Definitely. And it's not just romantic love that psychologists study. They also look at love between family members, friends, and even pets.

Deborah: That's true. Love is such an important part of our lives, and understanding it better can help us have healthier relationships and lead more fulfilling lives.

Hiroshi: Absolutely. I think the more we can learn about love, the better equipped we are to navigate the complex world of relationships.

Marina: And who knows, maybe someday we'll even be able to find a way to measure love scientifically.

Now try to produce your own dialogue about the topic of love.

Group Project for Section 1

Section 1 Week 5

Group Project for Section 1

Use this page to brainstorm some ideas that you would like to explore for your 1st group project. Draw a mind map to help you organize your ideas.

In our next class, you will present this topic to the class. So, assign roles for each person in your group. Everyone has to participate!

Section 2: Cognitive Psychology

Unit 4: Perception & Gestalt Psychology

Key vocabulary				
Perception	Pay Attention	Phenomenon		
知覚	注意する	現像		
Blindness	Succession	Interpret		
盲目	連続	解釈する		

Content: Background Reading

Section 2 Week 6

<u>Perception</u> is the process by which the cognitive system *constructs* an *internal representation* of the outside world. It is an active process, not like a photograph, but more like a painting. Visual perception allows us to **interpret** and make sense of the visual information received by the eyes. The process of visual perception involves various stages, including sensation, **attention**, and interpretation. However, our visual perception is not always accurate, and we may miss important details or fail to detect changes in the visual environment. Two phenomena that demonstrate this are *change <u>blindness</u>* and *inattention blindness*.

Change blindness refers to the **phenomenon** where people fail to notice changes in a visual scene that occur unexpectedly or during a brief interruption, even if the changes are fairly obvious. For example, if two similar images are presented in quick **succession**, and a small but significant detail is changed between them, people often fail to notice the difference (see Gradual change blindness - <u>https://www.youtube.com/watch?v=EARtANyz98Q</u>, Movie Perception Test – Conversation - <u>https://www.youtube.com/watch?v=6JONMYxaZ_s</u>, Change blindness demonstration - <u>https://www.youtube.com/watch?v=bh_9XFzbWV8</u>). This occurs because our visual system processes only a limited amount of information at any given moment, and changes outside of our current focus of attention are not processed.

Inattentional blindness, on the other hand, occurs when people fail to notice an unexpected object or event that is fully visible and right in front of them, simply because they are not **paying attention** to it. The classic example is the "gorilla in the room" study (Simons and Chabris, 1999), where participants were asked to watch a video of people passing a basketball and to count the number of passes. In the middle of the video, a person in a gorilla suit walked across the screen, but half of the participants did not notice it because they were too focused on counting the passes (see Selective Attention Test - https://www.youtube.com/watch?v=vJG698U2Mvo or the "Door" study - https://www.youtube.com/watch?v=FWSxSQsspiQ , both by Daniel Simons).

Both change blindness and inattentional blindness highlight the limitations of our visual system and the importance of attention in perception.

Key vocabulary

Cognition	Law of Proximity	Law of Similarity	Holistic
認知	近接性の法則	類似性の法則	全体論の
Figure/ground	Law of Continuity	Law of Closure	Abrupt
形と背景の法則	持続性の法則	閉鎖性の法則	突然の



Week 6

Gestalt psychology is a school of thought in psychology that originated in Germany in the early 20th century. The word "Gestalt" is derived from the German word meaning "shape" or "form," and this approach focuses on the idea that the *whole is greater than the sum of its parts*. In other words, perception and <u>cognition</u> are seen as <u>holistic</u> processes that involve the organization of individual elements into meaningful patterns or structures.

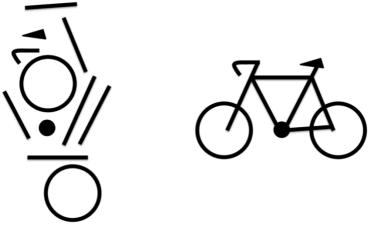


Figure 8: An image that shows "the whole is greater than the sum of its parts"

Take for example the above image (see Figure 8). The image on the left is made up entirely of the same parts as the image on the right. However, we see the image on the right differently. This means, that the "whole", in this case the bicycle, is greater than all of its individual parts that make it.

Gestalt psychology has contributed to our understanding of a range of psychological phenomena, such as perception, learning, and problem-solving. For example, the principles of Gestalt psychology explain how we perceive complex images or scenes, highlighting the importance of context and the relationship between elements.

Gestalt Psychology examines the principles that govern how we perceive and organize sensory information into meaningful patterns or structures. These laws are based on the idea that perception is not just a passive process of receiving sensory input but an active process of organizing that input into <u>coherent</u> and meaningful representations.

There are several key laws of perception in Gestalt Psychology.

• The first is the law of *proximity*, which states that objects or elements that are close together in space are perceived as belonging together. In Figure 9, we perceive two distinct groups of circles based on how close they are to each other. In the image in Figure 10, you can see how this works with logo design. The left image, we perceive three elements that are not connected or belonging to each other, however in the right image, based on proximity, we see the elements as being connected into one whole.

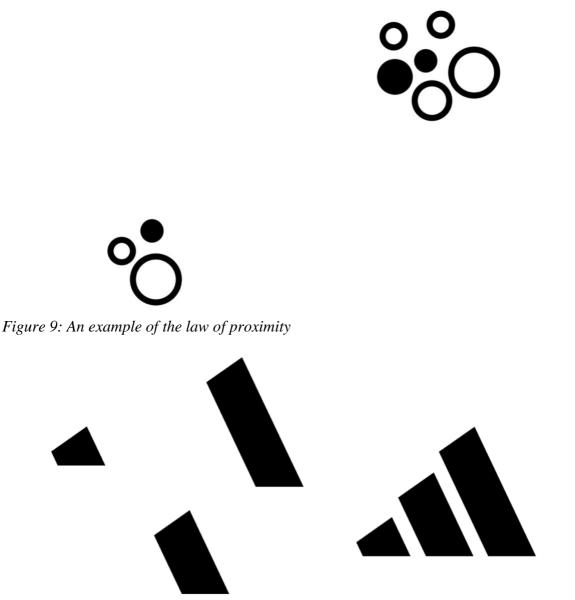


Figure 10: An example of the law of proximity in a real-world logo design

• the second is the law of *similarity*, which suggests that objects or elements that share similar physical features such as shape, size, or color are perceived as being related. In Figure 11, we perceive 4 distinct and separate groups based on similarity and in the second image we perceive the number 5 based on similarity of color. Figure 12 shows again similarly (shape and color), but also the power of anomaly. This means that your attention is focused on what is different (i.e., the frog). This can be used to create a focal point in a design.

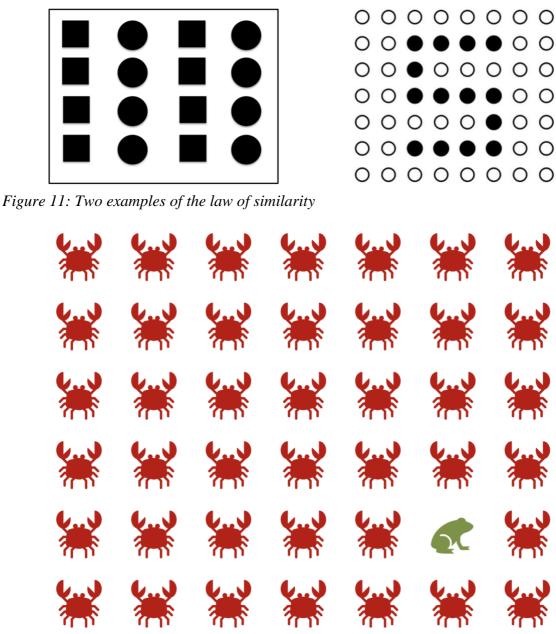


Figure 12: An example of similarity with a focal point (power of anomaly)

• the third is the law of *closure*, which refers to our tendency to fill in missing information or gaps in perception to create a complete image. Look at the image in Figure 13, I assume you have filled in the missing parts of this image and can see it as a *bicycle*. This can also appear in text. Take a look at Figure 14, again, reading the name of this city is quite effortless despite most of the text appearing completely white (or blank on a white page). Also, think about the panda in the WWF logo, again this is an example of closure.



Figure 13: An example of the law of closure

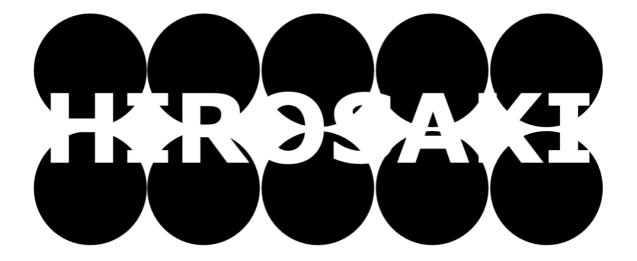


Figure 14: A second example of the law of closure

• and the law of *continuity*, which suggests that the human eye tends to perceive smooth, continuous lines rather than <u>abrupt</u> or irregular changes in order to determine a relationship between design elements. This shows that the human eye prefers to see a continuous flow of visual elements rather than separated objects. Take for example, Figure 15.

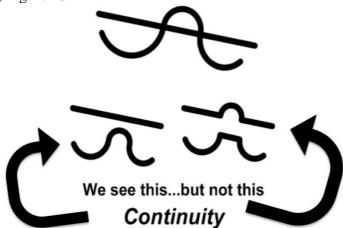
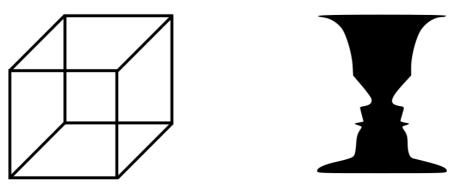
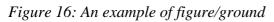


Figure 15: An example of the law of continuity

• The last important concept in Gestalt's principles of perceptual organization is something called "Multistability" or Figure/Background. This happens when a stimulus has "bistable percepts" or otherwise, an image that can be perceived in two different ways, and these are called a **figure** and a **ground**. Below (see Figure 16) are two classic examples of this. On the left is "Necker's" cube, your perception may alternate between what is front side and what is back side in this 3-D cube. On the right is the "Rubin" vase or the "faces or vases" illustration. If interested in this topic, search for M.C. Escher and how he used this concept to make many famous drawings. Again, to see how common this concept is in design – visit the following Zoo website and observe the logo on the top left (<u>https://www.pittsburghzoo.org</u>).





There are more of these laws of perception in Gestalt Psychology, but these are main ones and they provide a framework for understanding how we organize and interpret sensory information, and they have been used to explain a range of perceptual phenomena, from how we perceive complex images and scenes to how we recognize faces and objects. Gestalt Psychology has had a significant impact on marketing and design, particularly in the field of visual communication. The principles of Gestalt psychology, which emphasize the importance of perception and cognition in organizing sensory information, have been applied to a range of marketing and design practices.

Homework

Section 2 Week 6

At home: Watch the short video that you were assigned.

1	CrashCourse: Perceiving is Believing: Crash Course Psychology #7			
-	https://www.youtube.com/watch?v=n46umYA_4dM			
2	Art with Kunstler: Gestalt Principles. How psychology influences your design strategy			
-	https://www.youtube.com/watch?v=G-xD1bDoNl4			
3	Khan Academy: Gestalt principles Processing the Environment			
Ũ	https://www.youtube.com/watch?v=20N53khArXA			

Then, write a 100-word summary of the video. Be prepared to come to class and share this summary with your group members.

Vocabulary Exercises

Match the word with its definition:

- a) Proximity
- b) Cognition
- c) Perception
- d) Holistic
- e) Abrupt
- f) Blindness
- g) Attention
- h) Phenomenon
- i) Interpret
- j) Succession
 - _____ The state of being unaware of one's surroundings.
 - _____ The way in which something is understood or regarded.
 - _____ The state of being close to or near.
 - _____ The ability to think and understand.
 - _____ The process of organizing and making sense of sensory information.
 - _____ The quality of being complete or unified.
 - _____ A surprising and sudden change.
 - _____ The act of being focused on something.
 - _____ A event or occurrence.
 - _____ A sequence or series of events.

Fill in the blank with the correct word:

- (1) ______ is the mental action or process of acquiring knowledge and understanding through thought, experience, and the senses.
- (2) Our ______ of the world around us is influenced by various factors.
- (3) A ______ approach to understanding a problem takes into account all of its aspects.
- (4) The _____ change in the image caught my attention.
- (5) Inattention ______ can occur when we fail to notice important details in our environment.
- (6) ______ is the process of selectively concentrating on certain aspects of the environment.
- (7) It can be difficult to ______ the meaning of Picasso's paintings.

Open-ended questions to think about before class (Use as discussion topics)

(1) In what ways can we apply Gestalt principles to improve visual communication, such as in advertising or graphic design? Choose a logo and describe how it uses principles of Gestalt in its design.

(2) What are some limitations of our visual perception and how do these limitations affect our daily lives?

(3) Why do we tend to group objects together based on their proximity or similarity, and what evolutionary advantages might this have?

(4) How do designers use their knowledge of visual perception and Gestalt principles to design more effective and engaging user experiences for digital media and technology?

Communication Activities

Section 2 Week 6

In class: Go around in a circle and have each student share his/her summary. Listen carefully to the other students' summaries. Then consider similarities and differences.

Similarities	Differences

Discuss your thoughts on the **<u>open-ended questions</u>** in the **homework section.**

Conversation

In the following conversation, 3 students are discussing visual perception. Practice the dialogue with your group members.

Hiroshi: Hi guys, what are you up to?

Marina: Just hanging out. How about you?

Hiroshi: I was reading about visual perception and I found it really interesting. Did you

know that our brain fills in the gaps in our visual perception?

Deborah: Really? That's pretty cool. Can you give an example?

Hiroshi: Sure. One famous example is the Kanizsa Triangle illusion. Even though the triangle isn't physically there, our brain perceives it because it fills in the missing parts of the image.

Marina: That's fascinating. What other illusions have you come across?

Hiroshi: Well, there's also the Müller-Lyer illusion where two lines of the same length appear to be different lengths because of the arrows on the end. And then there's the Ponzo illusion where two lines that are the same length appear to be different because of the way they're placed in relation to the converging lines.

Deborah: Wow, I had no idea there were so many different types of illusions.

Marina: Speaking of perception, have you guys heard of change blindness?

Hiroshi: Yeah, that's where we fail to notice a change in a visual scene because we're not paying attention, right?

Marina: Exactly. It's like when you're watching a movie and you don't notice a character's haircut has changed because you're so focused on the dialogue.

Deborah: That's interesting. What about inattention blindness?

Hiroshi: I think that's where we fail to notice something in a visual scene because we're paying attention to something else, right?

Marina: Yes, like when you're driving and you don't see a pedestrian because you're focused on the road.

Deborah: Wow, it's amazing how much our attention can affect our perception.

Hiroshi: Definitely. Visual perception is so complex and fascinating.

Now try to produce your own dialogue about the topic of visual perception.

Unit 5: Memory

Key vocabulary

Distractions 気が散る	Epilepsy てんかん	·	Explicit 明確な	1	olicit 黙な	Amnesia 記憶喪失	Phonology 音声システム
Semantic M 意味記		es Episodic Memor エピソード記				Procedural M 手続き言	

Content: Background Reading

Section 2 Week 7

Memory is an essential part of our lives, allowing us to retain and recall information from our past experiences. The brain's memory system is complex, and the process of encoding, storing, and retrieving information involves different parts of the brain and various cognitive processes.

- *The <u>Encoding</u> Process:* The first step in the memory process is encoding. Encoding is the process of transforming sensory information into a format that can be stored in the brain. This process involves attention, which allows us to focus on relevant information and ignore <u>distractions</u>. The information then moves into short-term memory, where it is held temporarily.
- *The Storage Process:* Once information has been encoded, it moves into long-term memory, where it is stored for future retrieval. Long-term memory has three main components: **procedural** memory, which is responsible for motor skills and habits; **semantic** memory, which contains general knowledge and concepts; and **episodic** memory, which stores personal experiences and events (see Figure 17).

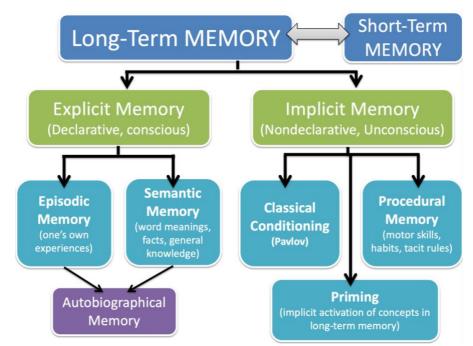


Figure 17: A diagram for long-term memory

• *The Retrieval Process:* Retrieval is the process of accessing and using information that has been stored in memory. There are several factors that can influence the retrieval of information, including the context in which the information was encoded, the strength of the memory, and the presence of cues that can trigger retrieval (see Figure 18 for a diagram of these processes)

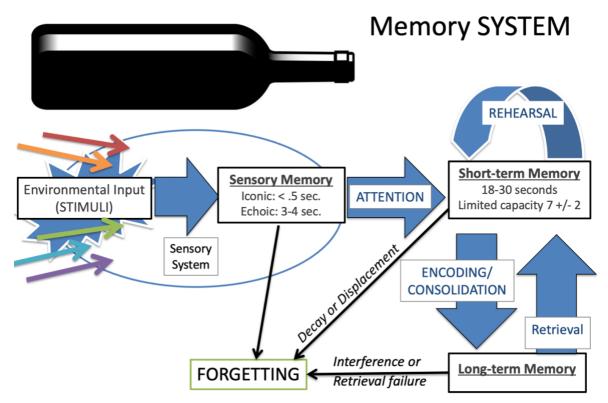


Figure 18: A diagram of the encoding, storage, and retrieval

The Story of H.M.

H.M. was an individual who played an instrumental role in advancing our understanding of memory. In 1953, he underwent a surgical procedure to remove parts of his medial temporal lobes in an attempt to treat his severe **epilepsy**. Unfortunately, the surgery led to severe **amnesia**, leaving H.M. unable to form new long-term memories. Despite this, H.M. retained his ability to learn and perform new motor skills, leading to the discovery of two different types of memory: declarative (explicit) memory, which refers to conscious and intentional memory for facts and events, and non-declarative (implicit) memory, which refers to Figure 17). H.M.'s case continues to provide valuable insights into the workings of memory and the importance of the medial temporal lobes in the formation of long-term memories.

Memory Theories

Atkinson and Shiffrin Model

There have been several theories proposed to explain how memory works. One of the earliest models was the Atkinson and Shiffrin model, which proposed that memory consisted of three stages: sensory memory, short-term memory, and long-term memory. According to this model, sensory memory briefly holds sensory information, short-term memory holds information temporarily, and long-term memory stores information permanently.

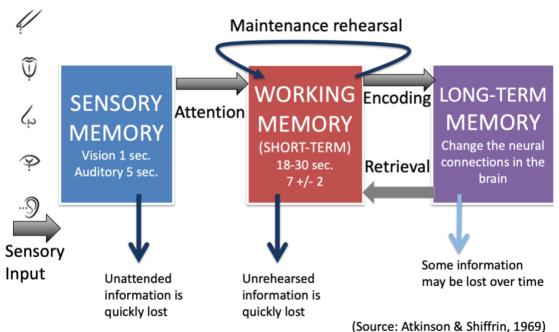


Figure 19: A diagram of the Atkinson and Shiffrin Model of Memory

Miller's Magical Number 7 +/- 2

One of the most famous findings in cognitive psychology related to memory is George Miller's "magical number seven, plus or minus two." In his 1956 paper, Miller argued that people's short-term memory capacity was limited to about seven items, plus or minus two. This means that people can remember about 5 to 9 pieces of information in their working memory at any given time. This finding has been supported by numerous subsequent studies, including Baddeley and Hitch's (1974) working memory model, which proposes that people have a limited capacity to hold information in their short-term memory, but can use strategies like chunking to increase their capacity. The magical number seven has important implications for many aspects of daily life, such as remembering phone numbers or lists of items, and it is still an active area of research in cognitive psychology today.

Baddeley's Working Memory Model

Another influential theory is Baddeley's working memory model, which proposes that working memory is a system that allows us to hold and manipulate information in our minds temporarily. This model suggests that working memory consists of several components, including the central executive, the phonological loop, and the visuospatial sketchpad.

Working Memory Model Baddeley, A. D., & Hitch, G. J. (2019). The phonological loop as a buffer store: An update. *Cortex*, *112*, 91-106.

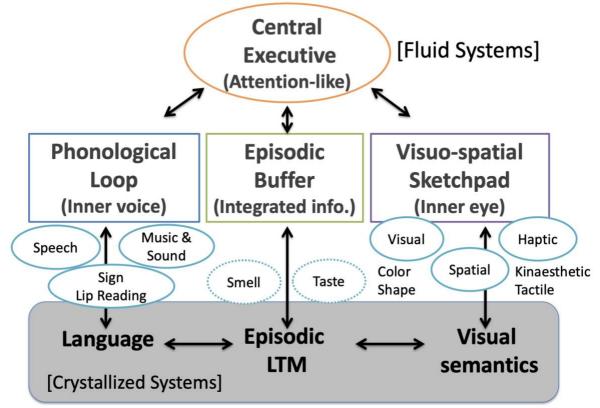


Figure 20: A diagram of Baddeley's Working Memory Model

There are several factors that can affect memory. For example, stress and anxiety can interfere with the encoding process, making it difficult to retain information. Recent research has also been conducted that examines how physical movement before learning can also facilitate memory retention. Sleep is also critical for memory consolidation, as it allows the brain to process and store information from the day.

The memory system is a complex and dynamic process that involves different parts of the brain and various cognitive processes. By understanding how the memory system works and the factors that affect memory, we can improve our ability to encode, store, and retrieve information, which can have significant implications for our academic, personal, and professional lives.

Homework

Section 2 Week 7

At home: Watch the short video that you were assigned.

1	https://www.youtube.com/watch?v=D-2p86FvqF4
	Ted-Ed : Are all of your memories real? - Daniel L. Schacter
2	https://www.youtube.com/watch?v=Pq0aQAG0A30 SciShow: How Do You Make Memories?
3	https://www.youtube.com/watch?v=pMMRE4Q2FGk
~	Khan Academy: Information Processing Model

Then, write a 100-word summary of the video. Be prepared to come to class and share this summary with your group members.

Vocabulary Exercises

Match the following terms with their definitions:

- a. Distractions
- b. Epilepsy
- c. Explicit
- d. Implicit
- e. Amnesia
- f. Phonology
- g. Semantic Memories
- h. Episodic Memories
- i. Procedural Memories
 - _____ The study of the sounds of a language.
 - _____ Memories of events and personal experiences.
 - _____ Memories for skills and habits.
 - _____ Memories of factual information.
 - _____ Loss of memory.
 - _____ Seizures caused by abnormal brain activity.
 - _____ Memories for the meanings of words and concepts.
 - _____ Memories that are not consciously accessible.

Fill in the blanks with the appropriate words:

(1) The patient suffered from ______ and could not remember anything that

happened to him before the accident.

- (2) When studying for an exam, it is important to avoid ______ that can interfere with your ability to retain information.
- (3) _____ memories are memories that are consciously accessible, while
 - _____ memories are memories that are not consciously accessible.
- (4) ______ refers to the ability to remember how to do something, such as riding a bike or typing on a keyboard.
- (5) ______ memories are memories of personal experiences and events, while ______ memories are memories of factual information.
- (6) ______ is a neurological disorder characterized by seizures caused by abnormal brain activity.
- (7) The study of the sounds of a language is known as ______, which is an important aspect of language processing.
- (8) _____ memories are memories for the meanings of words and concepts.

Choose the best word to complete the sentence:

(1) When studying for an exam, it is important to avoid ______ that can interfere with your ability to retain information.

a. amnesia b. distractions c. phonology d. implicit

(2) _____ memories are memories of personal experiences and events.

a. episodic b. semantic c. procedural d. implicit

(3) The ability to remember how to do something, such as riding a bike or typing on a keyboard, is known as _____ memory.

a. explicit b. implicit c. episodic d. semantic

(4) _____ is a neurological disorder characterized by seizures caused by abnormal brain activity.

a. amnesia b. epilepsy c. phonology d. procedural

(5) Memories that are not consciously accessible are known as _____ memories.a. explicit b. implicit c. episodic d. semantic

Open-ended questions to think about before class (Use as discussion topics)

- (1) How does culture influence the way we remember events and experiences?
- (2) What is the role of emotion in the formation and retrieval of memories?
- (3) How do false memories arise and what are the implications of such memories in legal and criminal contexts?
- (4) How can we improve our memory retention and retrieval?
- (5) How does aging affect memory and what are some strategies to combat age-related memory decline?
- (6) How can technology be used to enhance memory and what are the potential risks and benefits?
- (7) What is the role of sleep in memory consolidation and how can we optimize our sleep to improve memory retention?

Communication Activities

Section 2 Week 7

In class: Go around in a circle and have each student share his/her summary. Listen carefully to the other students' summaries and take notes below.

Summary 1	Summary 2

Discuss your thoughts on the **<u>open-ended questions</u>** in the **homework section.**

Conversation

In the following conversation, 3 students are discussing memory. Practice the dialogue with your group members.

Hiroshi: Have you ever wondered how our memory works?

Marina: Yeah, it's amazing how we can remember so many things!

Deborah: I heard that there are different types of memory. Like, there's short-term memory and long-term memory.

Hiroshi: That's right. Short-term memory is like our working memory, where we can hold onto information for a short amount of time, like a phone number or a shopping list.

Marina: And long-term memory is like the memories we have from our childhood or special events in our lives, right?

Deborah: Yeah, but how does our brain know which memories to keep and which ones to forget?

Hiroshi: Well, there are different theories about that. One theory is the Atkinson-Shiffrin model, which suggests that information first enters our sensory memory, then goes into our short-term memory, and if we rehearse it enough, it can go into our long-term memory. **Marina**: But what about the magical number seven? I've heard that we can only remember

about seven things at a time.

Deborah: Yeah, I heard about that too. It's crazy to think that our memory has a limit. **Hiroshi**: It is, but we can use techniques like chunking to help us remember more. Like if we're trying to remember a long number, we can break it up into smaller chunks to make it easier to remember.

Marina: That's a good idea. I always struggle to remember long numbers.

Deborah: Me too. It's fascinating to learn about how our memory works and all the different strategies we can use to improve it.

Hiroshi: Definitely. Memory is such an important part of our lives, and understanding it better can help us in so many ways.

Now try to produce your own dialogue about the topic of memory.

Unit 6: Creativity

Kev vocabularv Multifaceted Fluency Elaboration Aesthetics 多面の 流暢性 精巧 美の Flexibility for their own sake Laypeople Emergent 新生の・現れる ・般の人 柔軟性 自分のために

Content: Background Reading

Section 2 Week 8

Creativity is a **<u>multifaceted</u>** construct that has intrigued psychologists and <u>**laypeople**</u> alike. The concept refers to the ability to generate novel and useful ideas, products, or solutions to problems. One of the earliest and most influential theories of creativity is the "four Ps" model proposed by psychologist J.P. Guilford. This refers to "person", "product", "process", and "press" (how the product is accepted in society) and how all four are necessary for creativity.

In the study of creativity, there is a distinction between "Big C" creativity and "little c" creativity. "Big C" creativity refers to the kind of creativity that produces novel and groundbreaking ideas that have a major impact on a particular field or society as a whole. This type of creativity is often associated with famous innovators and is relatively rare. Examples include individuals like Leonardo da Vinci, Albert Einstein, and Steve Jobs. "Little c" creativity, on the other hand, refers to the kind of creativity that is more common in everyday life and involves coming up with new and useful ideas or solutions to problems. This type of creativity is often seen in people's hobbies, personal projects, and work life. While "little c" creativity may not have the same level of impact as "Big C" creativity, it is still important for personal and societal development. The concept of "little c" creativity is not just limited to a select few individuals.

Paul Torrance developed a famous test called the *Torrance Test of Creative Thinking* to measure creativity. However, recent criticisms argue that it measures something called "creative potential", not necessarily creativity. This test has participants complete a set of divergent thinking tasks that require them to complete either a verbal (using language) or figural (using drawings) task such as the following:

- Verbal The Unusual Uses Task: "Come up with as many different uses for a cardboard box (PET bottle, paper clip, etc.)
- Figural The "O O" drawing: "You are given a piece of paper with many O O on it and you have to draw as many pictures as you can." (See Figure 21")

Then, these tasks can be assessed using four key components: (1) <u>*fluency*</u>, or the ability to generate a large number of ideas; (2) <u>*flexibility*</u>, or the ability to shift between different types of thinking; (3) *originality*, or the ability to generate unique and unusual ideas; and (4) <u>*elaboration*</u>, or the ability to develop and refine ideas.

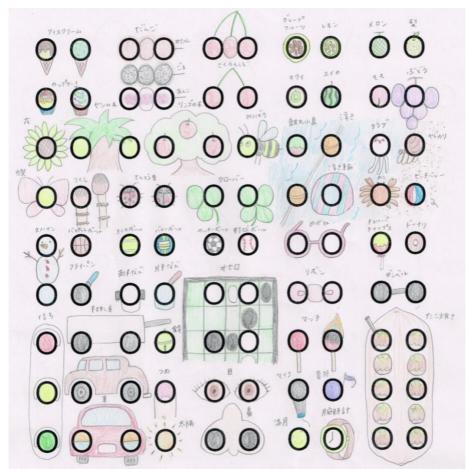


Figure 21: Example of a divergent thinking task (Figural – The "O O" drawing)

Another influential theory of creativity is the "componential model" proposed by psychologist Teresa Amabile. According to this model, creativity involves three key components: (1) domain-relevant skills, or expertise in a particular domain; (2) creativity-relevant processes, or the ability to use different thinking strategies to generate new ideas; and (3) intrinsic motivation, or the desire to engage in creative activities **for their own sake**. Recent research has also highlighted the role of various cognitive and affective factors in creativity. For example, studies have shown that individuals with high levels of openness to experience are more likely to be creative, possibly because they are more receptive to new and unconventional ideas. Other research has shown that positive affect, or a generally positive mood, can enhance creativity by promoting flexible thinking and reducing cognitive rigidity.

Other researchers examine creative cognition, or the mental process of generating new and original ideas or solutions to problems. This involves a combination of divergent thinking (the ability to generate multiple ideas) and convergent thinking (the ability to select and refine the best ideas). Creative cognition is not just limited to artistic or **aesthetic** pursuits, but can also be applied to many different areas, such as science, technology, and business. Some researchers believe that creative cognition is closely linked to other cognitive processes, such as memory, attention, and executive function. It has been suggested that creative cognition involves the activation of neural networks in the brain that are involved in the processing of novel information, the integration of information from different sources, and the inhibition of pre-existing mental sets or schemas.

A key cognitive process for creativity is something called "conceptual blending" or the ability of taking two or more different ideas or concepts and combining them into a new and potentially useful mental representation. It is a way of generating novel and creative ideas by blending elements from different domains or mental spaces. According to the theory of conceptual blending, when we blend different mental spaces, we create a new "blend" space that has its own **emergent** properties and structures. This process can lead to the creation of new concepts, insights, and solutions to problems. The process of conceptual blending involves a number of mental operations, including selecting inputs, mapping and integrating them, and elaborating and revising the blend. Some researchers have suggested that conceptual blending is a fundamental aspect of human cognition that underlies many of our most creative and innovative achievements. A common example of conceptual blending is metaphor, which can include both linguistic metaphors, but also visual metaphors (commonly found in advertisements).

Moreover, conceptual blending has been linked to the process of biomimicry, which involves using nature as inspiration for solving human problems. Biomimicry has been used to develop new technologies, products, and systems that are more sustainable and efficient, such as using the structure of bird feathers to develop better airplane wings or the shape of shark skin to create more effective swimming suits. Conceptual blending can be used to create new ideas by blending different concepts, including those inspired by nature, to find solutions to complex problems. In fact, researchers have found that the use of conceptual blending can lead to more innovative and effective biomimicry solutions. Thus, the combination of conceptual blending and biomimicry has the potential to lead to new breakthroughs in science and technology that are both innovative and sustainable such as the following examples:

- Velcro: The idea for Velcro, a fastener made of two strips of fabric that stick together when pressed, was inspired by the way burrs attached themselves to the fur of a dog. Swiss engineer George de Mestral noticed this while hiking in the woods and became curious about the mechanism behind it. He examined burrs under a microscope and found that they contained tiny hooks that caught onto the loops of fabric in his pants. This led him to create a similar mechanism for fastening things, which he called Velcro.
- Wind turbines: Wind turbines are designed to harness the power of wind and convert it into electricity. One challenge in designing wind turbines is reducing noise, which can be a nuisance for nearby residents. To solve this problem, engineers turned to biomimicry and studied the shape of owl wings. Owls have specialized feathers that enable them to fly silently and hunt without being heard by their prey. Engineers used this insight to design a new type of wind turbine blade that mimics the structure of owl wings, resulting in a more efficient and quieter wind turbine.

Creativity plays an important role in society, both in terms of innovation and cultural development. Innovations in science, technology, and industry often require creative solutions to complex problems. For example, the development of electric cars or the creation of new medical treatments requires the use of creative thinking. Creativity can also play a role in the arts, literature, and music, allowing for new expressions of culture and identity. In addition, creative individuals can help bring new ideas and perspectives to societal issues, leading to progress and positive change. Moreover, creativity can help individuals improve their problem-solving skills, boost their self-confidence, and enhance their ability to adapt to change. Therefore, nurturing and encouraging creativity can have a positive impact on individuals and society as a whole.

Homework

Section 1 Week 8

At home: Watch the short video that you were assigned.

1	Harvard Professional Development: Convergent vs. Divergent Thinking
_	https://www.youtube.com/watch?v=xjE2RV6IQzo
2	Sprouts : Creative Thinking: How to Increase the Dots to Connect
-	https://www.youtube.com/watch?v=cYhgIlTy4yY
3	Academy of Ideas: The Nature of Creativity and The Courage to Create
C	https://www.youtube.com/watch?v=sLaBgT3zE-A&t=205s

Then, write a 100-word summary of the video. Be prepared to come to class and share this summary with your group members.

Vocabulary Exercises

Fill in the blank:

- 1. The artist's ______ in creating the painting is evident in the intricate details and color choices.
- 2. The presenter explained the research findings to the _____ in a way that was easy to understand.
- 3. In creative thinking, it's important to have ______ in your approach to problem-solving.
- 4. In brainstorming, it's important to aim for ______ rather than perfection.
- 5. The author's book was praised for its ______ appeal and beautiful language.

Match the word to its definition:

- a. Flexibility
- b. Multifaceted
- c. Emergent
- d. Fluency
- e. Aesthetics
- f. Elaboration
- g. Laypeople

_____ The quality of being easily adaptable or responsive to change

- _____ The visual, auditory, or tactile properties of an object or design
- _____ The ability to generate many ideas quickly
- _____ The process of adding detail or depth to an idea
- _____ People without specialized knowledge or training in a particular field
- _____ The characteristic of having many different aspects or dimensions
- _____ A quality that arises unexpectedly or spontaneously

Open-ended questions to think about before class (Use as discussion topics)

- (1) What is your definition of creativity? Can it be taught, or is it an innate ability?
- (2) What role does culture play in shaping our creativity?
- (3) How do different creative domains (e.g. music, art) differ in their creative processes?
- (4) What is the difference between convergent and divergent thinking?
- (5) How does the concept of incubation relate to creative problem-solving?
- (6) How might creativity be related to other cognitive processes, such as memory or attention?

Communication Activities

Section 2 Week 8

In class: Go around in a circle and have each student share his/her summary. Listen carefully to the other students' summaries. Then consider similarities and differences.

Similarities	Differences

Discuss your thoughts on the **<u>open-ended questions</u>** in the **homework section.**

Conversation

In the following conversation, 3 students are discussing creativity. Practice the dialogue with your group members.

Marina: Hey guys, have you ever thought about how important creativity is nowadays? Deborah: Definitely, I think it's becoming increasingly important in our fast-changing world. Hiroshi: I agree. Many jobs today require creative problem-solving and thinking outside the box.

Marina: Exactly! But do you think our education system is doing enough to develop our creativity?

Deborah: I don't think so. Our education system focuses more on memorization and regurgitation of information rather than encouraging us to think creatively and come up with our own ideas.

Hiroshi: That's true. It seems like creativity is often seen as a "soft" skill, not as important as math or science.

Marina: I think that's a big mistake. Without creativity, we wouldn't have some of the amazing innovations and inventions that we have today.

Deborah: Yeah, and it's not just about creating new products or technologies. Creativity can also help us find new solutions to social and environmental problems.

Hiroshi: Agreed. It's a valuable skill that should be nurtured from an early age, but unfortunately, our education system tends to stifle it.

Marina: We need to push for more creativity-focused education and encourage more handson, experiential learning.

Deborah: And we should also encourage students to take risks and think outside the box, even if it means making mistakes along the way.

Hiroshi: Definitely. If we want to be successful in the future, we need to embrace creativity and make it a priority in our education and in our lives.

Now try to produce your own dialogue about the topic of creativity.

Group Project for Section 2

Section 2 Week 9

Group Project for Section 2

Use this page to brainstorm some ideas that you would like to explore for your 1st group project. Draw a mind map to help you organize your ideas.

In our next class, you will present this topic to the class. So, assign roles for each person in your group. Everyone has to participate!

Section 3 Personality & Social Psychology

Unit 7: Personality

Vocabulary list

Traits	Openness	Conscientiousness
特性	開放性	誠実性
Extraversion	Agreeableness	Neuroticism
外向性	協調性	神経症傾向

Content: Background Reading 1

Section 3 Week 10

There were several prominent theories of personality that attempted to explain human behavior and development. Here are a few examples:

- 1. **Psychoanalytic theory**: Developed by Sigmund Freud, this theory suggests that personality is shaped by unconscious desires and conflicts. Freud believed that people have three parts to their psyche: the id (representing instinctual drives), the ego (representing conscious thought and decision-making), and the superego (representing internalized morals and values). The interplay between these three parts of the psyche was believed to shape behavior and personality.
- 2. **Behaviorist theory**: This theory emphasizes the role of environmental factors in shaping personality. Behaviorists believe that behavior is shaped through learning and reinforcement, and that personality is largely a product of the environment. They focus on observable behaviors and do not give much attention to internal thought processes.
- 3. **Humanistic theory**: This theory emphasizes individual growth and self-actualization. Humanistic psychologists believe that people have an innate drive to grow and develop, and that they can achieve their full potential when given the right conditions. They focus on the individual's subjective experience and believe that people have unique strengths and qualities that make them who they are.
- 4. **Trait theory**: Trait theorists believe that personality consists of a set of consistent traits or characteristics that can be measured and assessed. They focus on identifying and describing these traits, and how they influence behavior. Trait theories were the precursor to the Big Five model and other contemporary models of personality.

In the mid-20th century, researchers began to develop *trait theories* of personality, which argue that personality consists of a set of consistent traits or characteristics. The most widely accepted model of personality today is the Big Five, which describes personality in terms of five key traits: openness, conscientiousness, extraversion, agreeableness, and neuroticism. The Big Five model has become a widely accepted way to describe human personality and has been extensively researched in the field of psychology. The next reading section will go into more detail of each of these traits and how they affect human behavior.

Content: Background Reading 2

Section 3 Week 10

It is easiest to remember the Big Five personality traits with this acronym – OCEAN – where each letter of this word stands for one of these traits. For example, we can start with the personality trait "Openness".

Openness

Research has shown a positive relationship between creativity and the personality trait of openness. Openness is characterized by:

- a willingness to explore new ideas,
- a preference for novelty and variety,
- and an appreciation of aesthetics and the arts.

Studies have found that individuals who score high on measures of openness tend to be more creative in a variety of domains, including music, visual arts, and creative writing. Furthermore, individuals who are more open to new experiences tend to be more likely to engage in creative activities and to generate a wider range of ideas.

Research has suggested that the relationship between openness and creativity may be partially explained by the fact that openness is associated with cognitive flexibility and divergent thinking, which are important components of the creative process.

Conscientiousness

Conscientiousness is a personality trait that is characterized by:

- self-discipline,
- organization, and
- a sense of responsibility.

Research has shown that individuals who score high on measures of conscientiousness tend to exhibit a range of behaviors and outcomes.

Some of the behaviors and outcomes that have been correlated with conscientiousness include:

- Achievement: They are often diligent and hardworking, which can lead to academic and occupational success.
- **Organization**: They may have a strong sense of routine and be able to manage their time and resources effectively.
- **Responsibility**: They may be seen as dependable and trustworthy, and they may be willing to go above and beyond to meet their obligations.
- **Health**: They may be more likely to engage in health-promoting behaviors, such as exercising regularly and eating a balanced diet.
- **Longevity**: This may be because they are more likely to engage in healthy behaviors, avoid risky behaviors, and seek medical care when necessary.

Overall, conscientiousness is a trait that is associated with a range of positive behaviors and outcomes, including achievement, organization, responsibility, health, and longevity. These tendencies can have positive effects on an individual's life and well-being.

Extraversion

Extraversion is a personality trait that is characterized by:

- sociability,
- assertiveness, and
- enthusiasm.

Research has shown that individuals who score high on measures of extraversion tend to exhibit a range of social and behavioral tendencies.

Some of the behaviors and outcomes that have been correlated with extraversion include:

- **Sociability**: They often seek out opportunities to interact with others and enjoy being in social situations.
- **Positive emotions**: They may be more likely to smile, laugh, or engage in other behaviors that signal positive affect.
- **Risk-taking**: This may include taking physical risks, such as participating in extreme sports, or social risks, such as approaching strangers in a social setting.
- Leadership: They are often seen as confident, assertive, and persuasive, which can help them to inspire and motivate others.
- **Sensation-seeking**: They may enjoy trying new foods, traveling to new places, or engaging in other activities that provide sensory stimulation.

Overall, extraversion is a trait that is associated with a range of social and behavioral tendencies, including sociability, positive emotions, risk-taking, leadership, and sensation-seeking. These tendencies can have both positive and negative consequences, depending on the situation and the individual.

Agreeableness

Agreeableness is a personality trait that is characterized by:

- a tendency to be cooperative,
- kind, and
- empathetic.

Research has shown that individuals who score high on measures of agreeableness tend to exhibit a range of behaviors and outcomes.

Some of the behaviors and outcomes that have been correlated with agreeableness include:

- Altruism: They may be more likely to help others and to show concern for the wellbeing of others.
- **Interpersonal relationships**: They may be more forgiving, more patient, and more supportive of others.
- **Teamwork**: They may be more willing to compromise, more open to feedback, and better at resolving conflicts.
- **Conformity**: Agreeable individuals may be more likely to conform to the expectations of others than less agreeable individuals.

Overall, agreeableness is a trait that is associated with a range of positive behaviors and outcomes, including altruism, positive interpersonal relationships, teamwork, emotional stability, and conformity. These tendencies can have positive effects on an individual's social and emotional well-being.

Neuroticism

Neuroticism is a personality trait that is characterized by:

• a tendency to experience negative emotions, such as anxiety, fear, and sadness. Research has shown that individuals who score high on measures of neuroticism tend to exhibit a range of behaviors and outcomes.

Some of the behaviors and outcomes that have been correlated with neuroticism include:

- **Emotional instability**: They may be more likely to experience mood swings, and may have a harder time coping with stressful situations.
- **Anxiety**: They may experience excessive worry, fear, or nervousness, and may have a tendency to catastrophize or overthink negative events.
- **Poor coping**: They may be more likely to engage in maladaptive coping strategies, such as substance use or avoidance, which can exacerbate their stress.
- **Physical health**: They may be more likely to experience chronic conditions such as heart disease, and may have a weaker immune system.
- **Impulsivity**: They may be more likely to engage in risky or impulsive behaviors, such as substance use, gambling, or dangerous driving.

Overall, neuroticism is a trait that is associated with a range of negative emotions, poor coping strategies, and poorer physical health outcomes. However, it is important to note that not all individuals who score high on measures of neuroticism will experience negative outcomes, and that some degree of neuroticism is a normal part of the human experience.

The opposite of neuroticism is *emotional stability* or emotional resilience.

Some of the behaviors and outcomes that have been correlated with emotional stability include:

- **Coping skills**: They may be better able to regulate their emotions, and to employ adaptive coping strategies, such as problem-solving or seeking social support.
- **Positive emotions**: They may have a more positive outlook on life and be more resilient in the face of adversity.
- Life satisfaction:. They may be more likely to experience a sense of purpose, meaning, and fulfillment in life.
- **Mental health**: may be less prone to mental health disorders such as anxiety and depression, and may have better overall psychological well-being.
- **Physical health**: They may be less likely to experience chronic health conditions, such as heart disease or diabetes, and may have a stronger immune system.

Homework

Section 3 Week 10

At home: Watch the short video that you were assigned.

1	https://www.youtube.com/watch?v=Hxk6GCKUiZI
-	Khan Academy: Trait theory
2	https://www.youtube.com/watch?v=Pc8IDcRVPZ4
-	Daniel Storage: The Big 5 Personality Traits, OCEAN
3	https://www.youtube.com/watch?v=IB1FVbo8TSs
	Sprouts: The Big Five Personality Traits

Then, write a 100-word summary of the video. Be prepared to come to class and share this summary with your group members.

Vocabulary Exercises

Match the following terms to their definitions:

- a. Traits
- b. Openness
- c. Conscientiousness
- d. Extraversion
- e. Agreeableness
- f. Neuroticism
 - _____ The degree to which someone is organized, dependable, and responsible.

_____ The degree to which someone is willing to experience new things and think in abstract ways.

_____ The degree to which someone is outgoing, assertive, and talkative.

_____ The degree to which someone is sympathetic, cooperative, and helpful.

_____ The degree to which someone is prone to anxiety, sadness, and emotional instability.

_____ Characteristics or qualities that describe an individual's personality.

Complete the following sentences with the appropriate personality term:

- (1) ______ refers to the degree to which someone is outgoing, assertive, and talkative.
- (2) People high in ______ are often creative, curious, and willing to experience new things.
- (3) ______ refers to the degree to which someone is prone to anxiety, sadness, and emotional instability.
- (4) Individuals high in ______ are often sympathetic, cooperative, and helpful.
- (5) ______ is the degree to which someone is organized, dependable, and responsible.

Open-ended questions to think about before class (Use as discussion topics)

- (1) How would you describe your own personality traits? Do you feel that you align with any of the Big 5 traits in particular?
- (2) In what ways do you think measuring personality traits could be useful in personal or professional settings?
- (3) How do you think your personality traits influence your creativity? Do you find that certain traits lend themselves better to creativity than others?
- (4) Are there any limitations to relying solely on personality trait assessments to understand someone's personality? Are there other factors that should be taken into account?

Communication Activities

Section 3 Week 10

In class: Go around in a circle and have each student share his/her summary. Listen carefully to the other students' summaries and take notes below.

Summary 1	Summary 2

Discuss your thoughts on the **<u>open-ended questions</u>** in the **homework section.**

Conversation Practice

In the following conversation, 3 students are discussing personality. Practice the dialogue with your group members.

Hiroshi: Hey guys, have you ever heard of the "Big Five" personality traits?

Deborah: Yeah, I remember studying that in my Intro to Psychology class last semester. It's a model that psychologists use to describe personality traits, right?

Marina: I've never heard of it. What are the Big Five traits?

- **Hiroshi**: There are five personality traits that are considered to be universal and consistent across different cultures. They are openness, conscientiousness, extraversion, agreeableness, and neuroticism.
- **Deborah**: That's right. Openness is about being imaginative, creative, and open to new experiences. Conscientiousness is being organized, responsible, and reliable. Extraversion is about being outgoing, social, and assertive. Agreeableness is being cooperative, empathetic, and caring. And neuroticism is being anxious, moody, and emotionally unstable.
- Marina: That's really interesting. I wonder how these traits are measured?
- **Hiroshi**: Well, there are several ways to measure them, but the most common method is through a personality test like the NEO Personality Inventory. It consists of a series of questions that assess each of the Big Five traits.
- **Deborah**: Yeah, and the results of the test can give you a better understanding of your own personality and how you interact with others.

Marina: I think I'd like to take the test. It sounds like a good way to learn more about myself. Hiroshi: It's definitely worth a try.

Now try to produce your own dialogue about the topic of personality.

<u>Add-on</u> 50 more Key words related to **Personality Traits** (beyond the Big 5)

	Personality Traits (beyond the	
1. Resilience	2. Diligence	3. Forgiveness
4. Self-discipline	5. Perfectionism	6. Greed
7. Assertiveness	8. Politeness	9. Humility
10. Ambition	11. Modesty	12. Imagination
13. Flexibility	14. Impulsivity	15. Impatience
16. Empathy	17. Responsibility	18. Indecisiveness
19. Honesty	20. Creativity	21. Inquisitiveness
22. Introspection	23. Cynicism	24. Jealousy
25. Curiosity	26. Disagreeableness	27. Laziness
28. Dependability	29. Enthusiasm	30. Narcissism
31. Pessimism	32. Timidity	33. Tactfulness
34. Playfulness	35. Trustworthiness	36. Thoughtfulness
37. Sadness	38. Warmth	39. Pessimism
40. Sensitivity	41. Stubbornness	42. Sociability
43. Assertiveness	44. Cheerfulness	45. Gullibility
46. Idealism	47. Patience	48. Perseverance
49. Sincerity	50. Tolerance	

Unit 8: Social Psychology 1

Key vocabulary

Imitation 見習うこと・真似すること	Reinforcement (Learning) 強化 (学習)	Aggressive 攻撃的な	Punch ぶん殴る
Loyalty	Judgement	Trustworthy	Replicate (results)
忠誠	判断	信頼できる	同じ結果を再現する

Content: Background Reading

Section 3 Week 11

Social psychology is the scientific study of how people's thoughts, feelings, and behaviors are influenced by the presence of others. The last two units in Section 3 cover a number of important and famous experiments. In this week we will read about Bandura's social learning theory and his study with bobo doll; the Robbers Cave experiment and social groups and intergroup conflicts; and the cognitive bias called the halo effect.

Bandura's social learning theory emphasizes the role of observation, modeling, and **imitation** in the acquisition and modification of behavior. According to this theory, individuals learn through a process of observation and modeling, where they observe the behavior of others and then imitate it. Social learning theory also emphasizes the role of **reinforcement** and punishment in shaping behavior. Individuals are more likely to repeat behaviors that are rewarded and less likely to repeat behaviors that are punished.

Albert Bandura's Bobo doll experiment is one of the most well-known and influential studies in social psychology. The study aimed to investigate the role of social modeling in shaping **aggressive** behavior in children.

In the experiment, children were divided into three groups. The first group was shown a video of an adult model aggressively attacking a Bobo doll, while the second group was shown a video of an adult playing calmly with toys. The third group was used as a control and not shown any video.

After viewing the video, each child was taken to a room with a Bobo doll and other toys. Children who had seen the aggressive video exhibited much more aggressive behavior towards the Bobo doll than those who had seen the non-aggressive or control videos. This included hitting, **<u>punching</u>**, and kicking the doll, as well as using the same aggressive language and actions that they had seen in the video.

The study demonstrated that children learn aggressive behavior through observation and modeling of others, even when the behavior is not reinforced or rewarded. The study also highlighted the importance of role models and the influence that they can have on children's behavior.

The Bobo doll experiment has been widely **<u>replicated</u>** and has had a significant impact on our understanding of social learning theory and the role of observation and modeling in shaping behavior.

The *Robbers Cave experiment* was a classic study conducted by social psychologist Muzafer Sherif in the 1950s. The experiment was designed to investigate intergroup conflict and cooperation. The study involved dividing a group of boys into two groups and placing them in separate camps. The groups were then made to compete against each other in a series of tasks. The study found that the boys quickly developed a strong sense of group identity and **loyalty**, and that they were willing to engage in aggressive behaviors towards the members of the other group. However, when the researchers introduced situations that required cooperation between the two groups, the boys were able to work together and reduce intergroup conflict.

The *halo effect* is a cognitive bias where people tend to make positive or negative judgments about others based on a single characteristic or trait. For example, if a person is physically attractive, they may be perceived as more intelligent or trustworthy, even if there is no evidence to support these perceptions. The halo effect can have a significant impact on how people are perceived and treated in various social settings, such as the workplace or in interpersonal relationships. A classic study that demonstrates the halo effect is the "What is Beautiful is Good" stereotype, in which individuals who are physically attractive are assumed to have more positive personality traits. This study was conducted by Dion, Berscheid, and Walster in 1972. In the study, participants were shown pictures of people of varying levels of physical attractiveness and were asked to rate their personality traits. The results showed that participants consistently rated the more physically attractive individuals as having more positive personality traits.

Notes (e.g., for new vocabulary):

Homework

Section 3 Week 11

At home: Watch the short video that you were assigned.

1	Sprouts: Social Learning Theory: Bandura's Bobo Beatdown Experiments	
	https://www.youtube.com/watch?v=XHIhkM1cAv4	
2	Sprouts : <i>Realistic Conflict Theory: The Psychology of War and Peace (The Robbers</i>	
_	Cave Experiment)	
	https://www.youtube.com/watch?v=9W0Txe-bhFE	
3	Khan Academy: Social perception - The Halo Effect	
C	https://www.youtube.com/watch?v=hx8bYUF30Gg	

Then, write a 100-word summary of the video. Be prepared to come to class and share this summary with your group members.

Vocabulary Exercises

Fill in the blank with the correct word:

- (1) When a child copies the behavior of their parents, it is an example of _____.
- (2) Positive ______ is when a behavior is followed by a rewarding consequence.
- (3) A person who uses physical force to get what they want is being ______.
- (4) He threw a ______ at the wall in a fit of anger.

(5) ______ to a group or cause can influence behavior.

- (6) People often make ______ about others based on limited information.
- (7) A person who keeps their promises and is reliable is considered ______.
- (8) Researchers attempt to ______ findings to ensure their validity.

Match the word to its definition:

- a. Imitation
- b. Reinforcement
- c. Aggressive
- d. Punch
- e. Loyalty
- f. Judgement
- g. Trustworthy
- h. Replicate

_____ The act of copying someone's behavior

- _____ A consequence that increases the likelihood of a behavior being repeated
- _____ Using physical force to get what you want
- _____ A hard hit with the fist
- _____ Devotion to a person or cause
- _____ Forming an opinion about someone or something
- _____ Dependable and honest
- _____ Repeating an experiment to confirm the results

Open-ended questions to think about before class (Use as discussion topics)

- (1) How do you think social learning affects our behavior?
- (2) What are some examples of groups that you are a part of and how do they influence your behavior?
- (3) How does the halo effect impact our perceptions of others?
- (4) Can social learning theory explain why people imitate aggressive behaviors they see in media?
- (5) In what ways can group dynamics be positive or negative?

Communication Activities

Section 3 Week 11

In class: Go around in a circle and have each student share his/her summary. Listen carefully to the other students' summaries and take notes below.

Summary 1	Summary 2	

Discuss your thoughts on the **<u>open-ended questions</u>** in the **homework section.**

Conversation

In the following conversation, 3 students are discussing social psychology. Practice the dialogue with your group members.

Hiroshi: Hi, guys! What have you been studying lately?

Marina: We were talking about social psychology in class, specifically about some famous experiments like the Bobo Doll experiment and the Halo Effect.

Deborah: Oh yeah, those are really interesting experiments. Do you guys remember what Bandura's Bobo Doll experiment was all about?

Hiroshi: I do. It was an experiment where children watched a video of an adult aggressively playing with a Bobo Doll, and then were given the chance to play with the doll themselves.

The children who watched the aggressive video were more likely to act aggressively towards the doll themselves.

Marina: Right. And this experiment demonstrated Bandura's theory of social learning, where people learn from observing and imitating others.

Deborah: Exactly. It also highlights the importance of media and the influence it has on our behavior.

Hiroshi: That's true. And have you guys heard about the Halo Effect experiment?

Marina: Yes, that's where people form an overall positive or negative impression of someone based on one or a few traits.

Deborah: That's right. I think the Halo Effect can be especially powerful when it comes to first impressions.

Hiroshi: Definitely. It's interesting to think about how much our first impression of someone can impact how we view them overall.

Marina: It's also important to be aware of the Halo Effect in our own judgments and try to avoid making snap judgments based on limited information.

Deborah: Agreed. It's a good reminder to always try to look at people and situations objectively.

Hiroshi: These experiments and theories are really fascinating. It's amazing to think about how much our behavior and perceptions can be influenced by the world around us.

Marina: Definitely. It makes me want to learn more about social psychology and the ways we interact with each other.

Deborah: Same here. I think it's important to be aware of these psychological phenomena in our daily lives and how they shape our perceptions and behavior.

Now try to produce your own dialogue about the topic of social psychology.

Unit 9: Social Psychology 2

Key vocabulary

Diffusion of responsibility	Beg	Prison	Intervene
責任の分散	お願う・請う	刑務所	干渉する・介入する
Conform to social pressures	Contradicts	Obedience	Confederate
圧力に負ける	矛盾する	従う・服従	実験に協力者

Content: Background Reading

Section 3 Week 12

This final week, we will cover some of the more infamous experiments done in the field of social psychology, namely the Milgram obedience study, the Stanford prison experiment, the bystander effect, and the Asch conformity experiment.

One famous experiment that illustrates the power of social influence is the *Milgram* <u>obedience</u> study. In this study, participants were asked to deliver increasing levels of electric shocks to a "learner" whenever they answered a question incorrectly. Despite the "learner" appearing to be in extreme pain and <u>begging</u> to stop the experiment, 65% of participants continued to administer shocks all the way to the highest voltage level, simply because an authority figure (the experimenter) instructed them to do so. This study highlights the important role of situational factors in shaping behavior.

Another famous experiment in social psychology is the *Stanford prison experiment*, which aimed to investigate how people adapt to the roles of prisoner and prison guard. In this study, college students were randomly assigned to play the role of either a prisoner or a guard in a simulated **prison** environment. The study had to be terminated after just six days due to the extreme and abusive behavior of the guards towards the prisoners, highlighting the power of situational factors to influence behavior and the importance of ethical considerations in research.

The *bystander effect* is another well-known phenomenon in social psychology. It refers to the tendency for individuals to be less likely to offer help to a person in distress when other people are present. This is because the presence of other people creates a <u>diffusion of</u> <u>responsibility</u>, where individuals feel less responsible for taking action because they assume someone else will do so. The bystander effect was first studied in depth after the murder of Kitty Genovese in 1964 outside her apartment building in New York City, where it was found that despite her cries for help, no one <u>intervened</u> or called for help.

The diffusion of responsibility refers to the tendency for individuals to feel less responsibility for taking action in a group context. When others are present, individuals may assume that someone else will take responsibility for a given situation, and as a result, they may not act themselves. The diffusion of responsibility can also be influenced by factors such as group size and the perceived competence of others in the group.

When there is nobody else around, the bystander effect may not occur in the same way. In fact, some research suggests that people may be more likely to intervene in emergency situations when they are the only ones present. This is sometimes referred to as the "solo bystander effect."

One study conducted by Latané and Darley (1970) found that participants were much more likely to intervene in an emergency when they were the only ones present. In this experiment, participants were seated in a room when smoke began to fill the room. When participants were alone, they were more likely to take action and investigate the smoke than when they were in a group with others. In sum, when people are the only one's present, they may feel a greater sense of responsibility to take action and help.

Research has shown that both the bystander effect and the diffusion of responsibility can have significant consequences in emergency situations, leading to delays in seeking help and potentially increasing harm to those in need. However, there are ways to combat these effects, such as emphasizing individual responsibility and encouraging bystanders to take action. Awareness campaigns and education can also be effective in reducing the bystander effect and diffusion of responsibility.

The *Asch conformity experiment* is one of the most well-known and influential studies in social psychology. Conducted by Solomon Asch in the 1950s, the experiment aimed to explore the extent to which individuals <u>conform to group pressure</u>, even when it <u>contradicts</u> their own perception of reality.

In the experiment, participants were presented with a simple task of comparing the lengths of lines on a card. They were placed in a group with several other participants, who were actually **<u>confederates</u>** of the experimenter. The group was asked to indicate which line was the longest, with each member giving their response aloud. The confederates were instructed to give incorrect answers on a predetermined number of trials.

The results of the experiment were surprising. Despite the task being easy and the correct answer being obvious, many participants conformed to the incorrect answers given by the confederates. About 75% of the participants conformed at least once during the experiment, even though they knew that the answer was wrong. Some participants even went as far as giving the same incorrect answer as the group, despite their own perception of the lines.

The Asch conformity experiment demonstrates the powerful influence that social pressure can have on individuals. It has had a significant impact on the field of social psychology, leading to further research on conformity, groupthink, and the effects of group dynamics on individual behavior. The study has also highlighted the importance of independent thinking and the need to resist group pressure, even in situations where it may be difficult to do so.

Social psychology research includes studies on obedience, conformity, group dynamics, and interpersonal relationships. Through these studies, we can better understand how social factors shape our thoughts, feelings, and behaviors and how we can apply this knowledge to real-world situations.

Homework

Section 3 Week 12

At home: Watch the short video that you were assigned.

1	Practical Psychology: The Stanford Prison Experiment	
_	https://www.youtube.com/watch?v=iXv91xFipLM	
2	Eqivideos: Asch Conformity Experiment	
-	https://www.youtube.com/watch?v=TYIh4MkcfJA	
3	Coolpsychologist: The Bystander Effect	
·	https://www.youtube.com/watch?v=OSsPfbup0ac&t=127s	

Then, write a 100-word summary of the video. Be prepared to come to class and share this summary with your group members.

Vocabulary Exercises

Fill in the blank with the appropriate word:

 After witnessing a crime, the bystander effect can cause ______ of responsibility among onlookers.

Circle the correct word to complete the sentence:

(2) The prisoner begged/contradicts for mercy, but the judge remained stern.

Rearrange the letters to form the correct word:

(3) lnioebecde - _____

Match the word to its definition:

- a. Intervene
- b. Conform to social pressures
- c. Obedience
- d. Diffusion of responsibility

_____ The tendency to follow the actions or beliefs of others in a group.

_____ The act of stepping in to prevent or change something.

_____ Compliance with the instructions or orders of someone in authority.

_____ The belief that one is not personally responsible to take action in a group setting.

Open-ended questions to think about before class (Use as discussion topics)

- (1) What factors contribute to the bystander effect and how can they be mitigated?
- (2) How does conformity influence behavior and decision-making in social situations?
- (3) How can we promote individual responsibility in situations where there is diffusion of responsibility?
- (4) What are the potential dangers of blindly conforming to social pressures?
- (5) In what ways can social media and technology impact social influence and behavior?
- (6) How do cultural differences affect responses to social influence and conformity?

Communication Activities

Section 3 Week 12

In class: Go around in a circle and have each student share his/her summary. Listen carefully to the other students' summaries and take notes below.

Summary 1	Summary 2

Discuss your thoughts on the **<u>open-ended questions</u>** in the **homework section.**

Conversation

In the following conversation, 3 students are discussing some famous social psychology experiments. Practice the dialogue with your group members.

Hiroshi: Hi, guys! I was reading about the Asch conformity experiment in our social psychology textbook. Have you heard about it?

Marina: Yes, I have. It's a classic experiment that demonstrated how people tend to conform to group pressure even if it goes against their own beliefs.

Deborah: That's right. The experiment was conducted in the 1950s and it showed that people are more likely to go along with the group even if they know the group's answer is incorrect.

Hiroshi: That's fascinating. But why do people conform to group pressure in the first place?

Marina: One reason is that people want to fit in and be accepted by the group. They fear rejection and criticism, so they conform to avoid standing out.

Deborah: And another reason is that people believe that the group must be right, especially if it consists of experts or people with more knowledge than themselves.

Hiroshi: I see. That's interesting. Do you think this applies to everyday life situations as well?

Marina: Definitely. For example, peer pressure can be a major influence on teenagers when it comes to alcohol and drug use.

Deborah: And in the workplace, employees may conform to group norms even if it goes against their personal values, just to fit in and avoid conflict.

Hiroshi: It's amazing how powerful the influence of the group can be. It makes me wonder how we can resist conformity and stay true to ourselves.

Marina: Well, having a strong sense of self-awareness and understanding our own values and beliefs can help us resist conformity and make independent decisions.

Deborah: And cultivating a growth mindset, where we believe in our ability to learn and grow, can also help us resist group pressure and make decisions that align with our personal goals.

Hiroshi: This is really interesting. It's amazing how much we can learn from social psychology.

Now try to produce your own dialogue about the topic of social psychology.

87

Group Project for Section 3

Section 3 Week 13

Group Project for Section 3

Use this page to brainstorm some ideas that you would like to explore for your 1st group project. Draw a mind map to help you organize your ideas.

In our next class, you will present this topic to the class. So, assign roles for each person in your group. Everyone has to participate!

References

Below are important references for the different units in this textbook. Go to *Google Scholar* and paste the reference to find more in-depth materials on these topics.

Section 1: Unit 1 Growth Theories and the Hierarchy of Needs

- Csikszentmihalyi, M., Abuhamdeh, S., & Nakamura, J. (2005). Flow. *Handbook of Competence and Motivation*, 598-608.
- Dweck, C. (2015). Carol Dweck revisits the growth mindset. *Education week*, 35(5), 20-24.
- Fredrickson, B. L. (2004). The broaden–and–build theory of positive emotions. *Philosophical Transactions of the Royal Society of London. Series B: Biological Sciences*, 359(1449), 1367-1377.

McLeod, S. (2007). Maslow's hierarchy of needs. Simply Psychology, 1(1-18).

Yeager, D. S., Hanselman, P., Walton, G. M., Murray, J. S., Crosnoe, R., Muller, C., ... & Dweck, C. S. (2019). A national experiment reveals where a growth mindset improves achievement. *Nature*, 573(7774), 364-369.

Section 1: Unit 2 Motivation and Self-Determination Theory

- Ryan, R. M., & Deci, E. L. (2017). Self-determination theory: Basic psychological needs in motivation, development, and wellness. Guilford Publications.
- Ryan, R. M., & Deci, E. L. (2020). Intrinsic and extrinsic motivation from a selfdetermination theory perspective: Definitions, theory, practices, and future directions. *Contemporary Educational Psychology*, 61, 101860.

Section 1: Unit 3 Emotion, Love, and Positive Psychology

- Barrett, L. F. (2006). Solving the emotion paradox: Categorization and the experience of emotion. *Personality and Social Psychology Review*, *10*(1), 20-46.
- Barrett, L. F. (2017). How emotions are made: The secret life of the brain. Pan Macmillan.
- Ekman, P. (1992). An argument for basic emotions. Cognition & Emotion 6, no. 3-4,169-200.
- Gable, S. L., & Haidt, J. (2005). What (and why) is positive psychology?. *Review of General Psychology*, 9(2), 103-110.
- Izard, C. E. (2009). Emotion theory and research: Highlights, unanswered questions, and emerging issues. *Annual Review of Psychology*, 60, 1-25.
- Sternberg, R. J. (1986). A triangular theory of love. *Psychological Review*, 93(2), 119.

Section 2: Unit 4 Perception and Gestalt

- Simons, D. J., & Chabris, C. F. (1999). Gorillas in our midst: Sustained inattentional blindness for dynamic events. *Perception*, 28(9), 1059-1074.
- Simons, D. J., & Levin, D. T. (1998). Failure to detect changes to people during a real-world interaction. *Psychonomic Bulletin & Review*, *5*, 644-649.
- Wagemans, J., Elder, J. H., Kubovy, M., Palmer, S. E., Peterson, M. A., Singh, M., & von der Heydt, R. (2012). A century of Gestalt psychology in visual perception: I. Perceptual grouping and figure–ground organization. *Psychological Bulletin*, 138(6), 1172.

Section 2: Unit 5 Memory

- Atkinson, R. C., & Shiffrin, R. M. (1968). Human memory: A proposed system and its control processes. In *Psychology of Learning and Motivation* (Vol. 2, pp. 89-195). Academic press.
- Baddeley, A. D., & Hitch, G. J. (2019). The phonological loop as a buffer store: An update. *Cortex*, *112*, 91-106.
- Miller, G. A. (1956). The magical number seven, plus or minus two: Some limits on our capacity for processing information. *Psychological Review*, 63(2), 81.

Section 2: Unit 6 Creativity

- Amabile, T. M. (1982). Social psychology of creativity: A consensual assessment technique. *Journal of Personality and Social Psychology*, 43(5), 997.
- Beghetto, R. A., & Kaufman, J. C. (2007). Toward a broader conception of creativity: A case for" mini-c" creativity. *Psychology of Aesthetics, Creativity, and the Arts*, 1(2), 73.
- Birdsell, B. J. (2019). Creative cognition: conceptual blending and expansion in a generative exemplar task. *IAFOR Journal of Psychology & the Behavioral Sciences*, 5(SI), 43-62.
- Birdsell, B. J. (2014). Fauconnier's theory of mental spaces and conceptual blending. *The Bloomsbury companion to cognitive linguistics*, 72-90.
- Kaufman, J. C., Plucker, J. A., & Baer, J. (2008). *Essentials of creativity assessment*. John Wiley & Sons.
- Kim, K. H. (2006). Can we trust creativity tests? A review of the Torrance Tests of Creative Thinking (TTCT). *Creativity Research Journal*, *18*(1), 3-14.

Section 3: Unit 7 Personality

- Cherry, K. (2019). What are the big 5 personality traits. *Very well Mind*. Retrieved from https://www.verywellmind.com/the-big-five-personality-dimensions-2795422
- Costa, P. T., Jr., & McCrae, R. R. (1992b). *Revised NEO personality inventory (NEO-PI-R)* and NEO five-factor inventory (NEO- FFI) professional manual. Odessa, FL: Psychological Assessment Resources.
- McCrae, R. R., & Costa, P. T., Jr. (1987). Validation of a five-factor model of personality across instruments and observers. *Journal of Personality and Social Psychology*, 52, 81-90.

Section 3: Unit 8 Social Psychology 1

- Bandura, A., & Walters, R. H. (1977). *Social learning theory*(Vol. 1). Prentice Hall: Englewood cliffs.
- Bandura, A. (1978). Social learning theory of aggression. *Journal of Communication*, 28(3), 12-29.
- University of Oklahoma. Institute of Group Relations, & Sherif, M. (1961). *Intergroup conflict and cooperation: The Robbers Cave experiment* (Vol. 10, pp. 150-198). Norman, OK: University Book Exchange.
- Nisbett, R. E., & Wilson, T. D. (1977). The halo effect: Evidence for unconscious alteration of judgments. *Journal of Personality and Social Psychology*, *35*(4), 250–256

Section 3: Unit 9 Social Psychology 2

- Latané, B., & Darley, J. M. (1970). *The unresponsive bystander: Why doesn't he help?*. Prentice Hall.
- McLeod, S. A. (2007). The milgram experiment. Simply Psychology.
- McLeod, S. (2018). Solomon Asch-Conformity Experiment. Simply Psychology, 28.
- McLeod, S. (2020). Stanford prison experiment. Simply Psychology.
- Zimbardo, P. G. (1973). On the ethics of intervention in human psychological research: With special reference to the Stanford prison experiment. *Cognition*, 2(2), 243-256.
- Zimbardo, P. G., Haney, C., Banks, W. C., & Jaffe, D. (1971). *The Stanford prison experiment*. Zimbardo, Incorporated.

Acknowledgements

All the figures and images in the textbook were made by Brian Birdsell. The three sketches of the students on page 4 were made by the following AI image generator (<u>https://www.craiyon.com</u>).

Other Online Resources

Below is a list of useful website and podcasts that provide insight information on a wide variety of Psychology related topics.

Websites

https://simplypsychology.org

"Simply Psychology is an educational website that provides informative articles, images, and videos to help you understand the academic theories in psychology, research methodology, and the science of well-being, including mental health and relationships."

https://www.verywellmind.com

"Welcome to Verywell Mind, an award-winning resource for reliable, compassionate, and up-to-date information on the mental health topics that matter most to you. We are dedicated to empowering you with the trustworthy evidence-based information you need for your mental and emotional well-being. Our mission is to help you prioritize your mental health and find balance amid the chaos of daily life."

Podcasts

https://www.apa.org/news/podcasts/speaking-of-psychology

"Speaking of Psychology is an audio podcast series highlighting some of the latest, most important, and relevant psychological research being conducted today. Produced by the American Psychological Association, these podcasts will help listeners apply the science of psychology to their everyday lives."

https://brainsciencepodcast.com

"The host of Brain Science is Dr. Ginger Campbell. Dr. Campbell is an experienced Emergency and Palliative Medicine physician with a long-standing interest in the brain and consciousness. In this podcast she shares recent discoveries from the world of neuroscience in a way that people of all backgrounds can enjoy. Dr. Campbell believes that understanding how the brain works gives us insight into what makes us human. She is also committed to showing how the scientific method has unravelled many long-standing mysteries."