

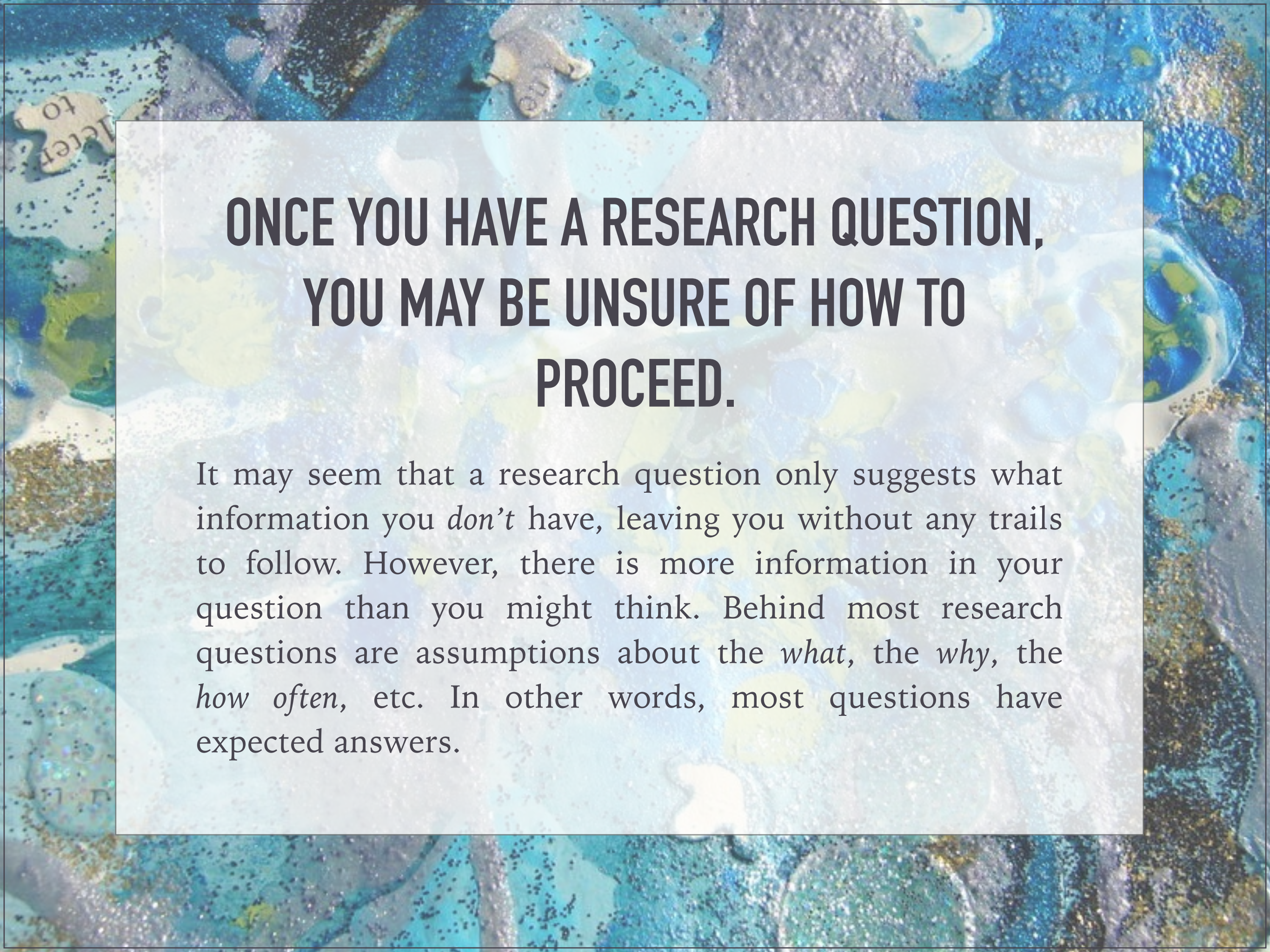


III. WHAT ANSWERS DO YOU EXPECT?



IN THIS CHAPTER:

- Theories and Hypotheses:
 - Definitions
 - Similarities and Differences
- Why Theories Cannot be Verified
- The Importance of Theories
- Types of Hypotheses
- Hypotheses and Laws



ONCE YOU HAVE A RESEARCH QUESTION, YOU MAY BE UNSURE OF HOW TO PROCEED.

It may seem that a research question only suggests what information you *don't* have, leaving you without any trails to follow. However, there is more information in your question than you might think. Behind most research questions are assumptions about the *what*, the *why*, the *how often*, etc. In other words, most questions have expected answers.

LET'S CONSIDER AN EXAMPLE:

In our discussion of research questions, we posed a series of questions related to money.

Let's say you were considering, *why do some cultures have a form of money?*

In this question, you want to know why some societies developed currency while others did not.

You likely had ideas that led you to ask this question. What are they? Your own reasoning could lead you to some predicted answers.



Rai stone disk currency from Yapese Islands, South Pacific

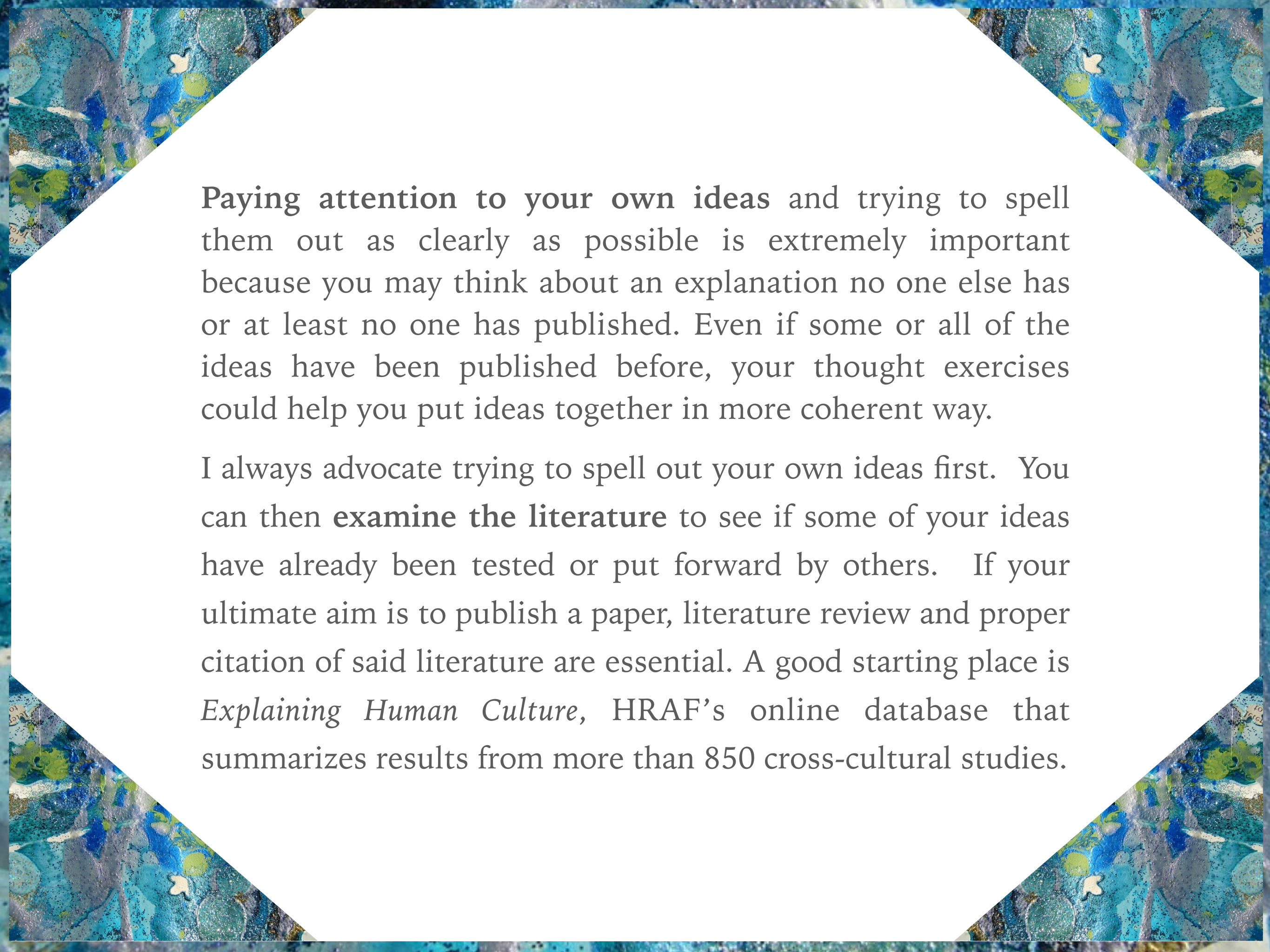
PRACTICE TRYING TO GET YOUR IDEAS OUT. WRITE THEM DOWN. LATER YOU CAN ORGANIZE THEM BETTER.

Let's suppose you have the idea that when some people start specializing in their occupation or craft, they begin to need many things from others. Currency is a convenient way to facilitate these exchanges. Exchanges do take place without money (this non-monetary form of exchange is called *barter*— an exchange of material goods or rights deemed roughly equally valuable to each party).

There are downsides to barter. It can be difficult to finding willing parties who have what you need and also desire your product in the quantities that you're willing to exchange. You reason that the more specialists there are in a society, the more difficult non-monetary exchange can become. In your mind, specialization may be the key factor at play.

Ask yourself some more questions. Under what conditions would specialization develop? Is it when people regularly produce surpluses? What conditions enable or encourage the production of surpluses? Is it advanced agriculture? Is it when people want to trade with people from other places?

What other conditions might push toward using currency? We know that in many places colonial authorities tried to persuade or coerce people into working on plantations or mines and paid people in wages. In that way, currency was introduced. Are you interested in that, or only the development of indigenous money?



Paying attention to your own ideas and trying to spell them out as clearly as possible is extremely important because you may think about an explanation no one else has or at least no one has published. Even if some or all of the ideas have been published before, your thought exercises could help you put ideas together in more coherent way.

I always advocate trying to spell out your own ideas first. You can then **examine the literature** to see if some of your ideas have already been tested or put forward by others. If your ultimate aim is to publish a paper, literature review and proper citation of said literature are essential. A good starting place is *Explaining Human Culture*, HRAF's online database that summarizes results from more than 850 cross-cultural studies.



BUT LET'S TRY TO SYSTEMATIZE THE ABOVE IDEAS ABOUT MONEY.

**TRY TO PUT DOWN THE MOST BASIC ASSUMPTIONS FIRST AND THEN SEE
WHAT IMPLICATIONS YOU MIGHT ARRIVE AT.**

THE FOLLOWING SLIDE CONTAINS SOME EXAMPLES.



Assumption 1: Money is not needed when people are largely self-sufficient and only need a few additional things from others.

Assumption 2: Barter, in which goods are exchanged for other goods or services, works well when either relatively few people are engaged in the barter system or when the quantity of items used for barter is relatively small.

Assumption 4: The emergence of widespread specialized occupations makes barter inefficient and paves the way for a money system to develop.

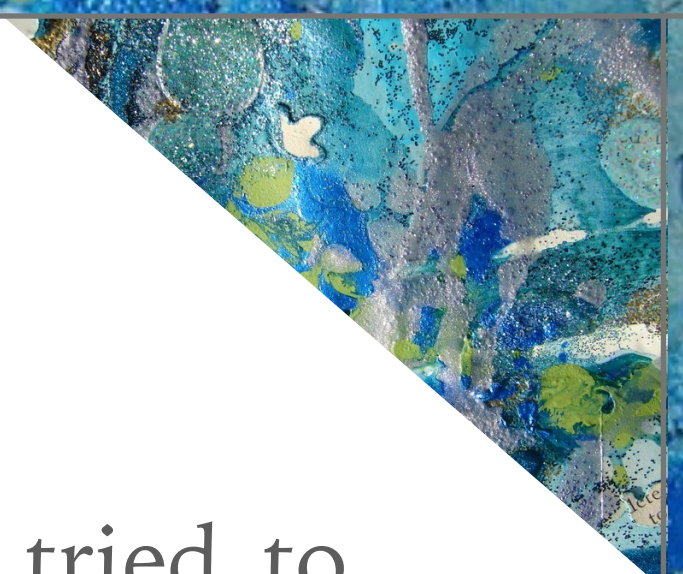
Assumption 5: The production of surpluses increases the likelihood of craft specialization.



Assumption 6: Surplus food production is more likely to occur with intensive agriculture.


Some implications: Intensive agricultural societies are more likely to have indigenous money systems than non-intensive agricultural societies. Societies with a high degree of occupational specialization are more likely to have indigenous money systems than those with low degrees of occupational specialization.





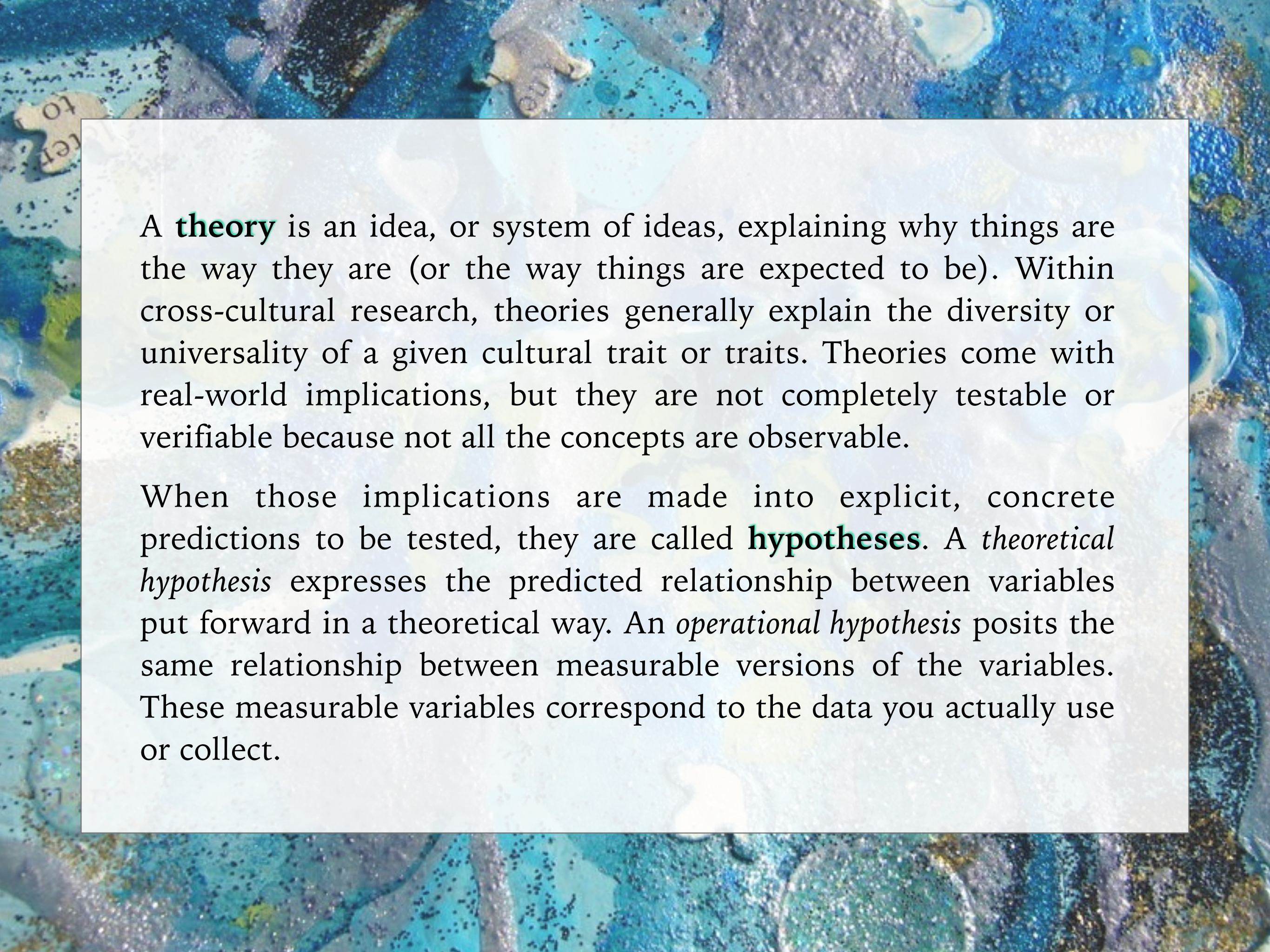
In actuality, what we have just done is tried to write a theory (see *assumptions*) and derive hypotheses (*implications*) that can be tested.

What is the difference between theory and hypotheses? Some people use these concepts interchangeably. An exploration and definition of these terms can be found on the following slides.



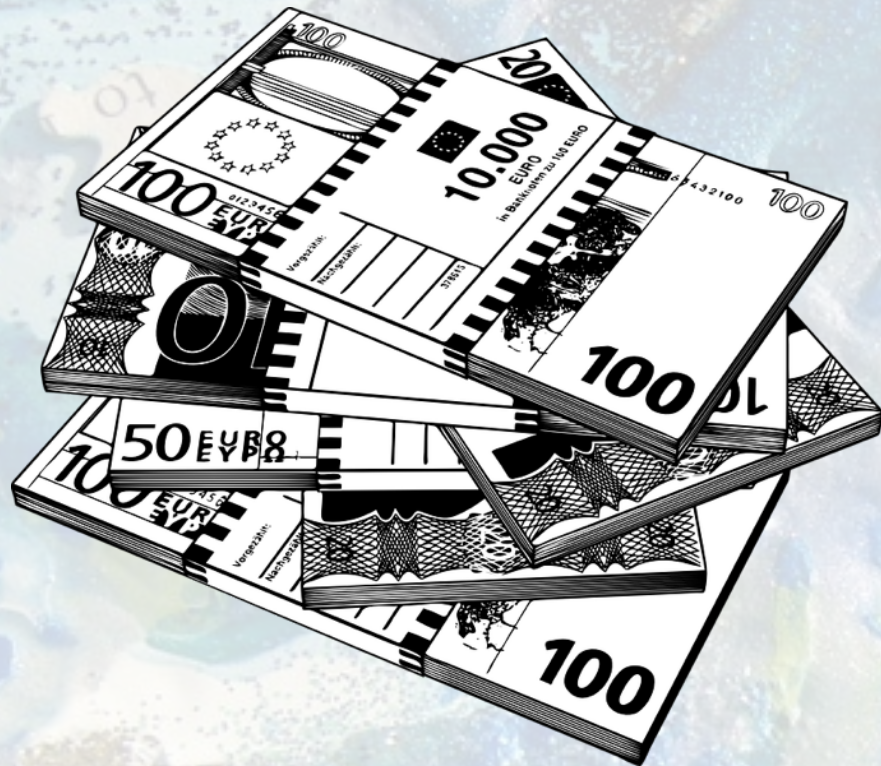


WHAT ARE THEORIES AND HYPOTHESES?



A **theory** is an idea, or system of ideas, explaining why things are the way they are (or the way things are expected to be). Within cross-cultural research, theories generally explain the diversity or universality of a given cultural trait or traits. Theories come with real-world implications, but they are not completely testable or verifiable because not all the concepts are observable.

When those implications are made into explicit, concrete predictions to be tested, they are called **hypotheses**. A *theoretical hypothesis* expresses the predicted relationship between variables put forward in a theoretical way. An *operational hypothesis* posits the same relationship between measurable versions of the variables. These measurable variables correspond to the data you actually use or collect.



LET'S COMPARE SOME OF THE **ASSUMPTIONS** (OR THEORETICAL STATEMENTS) IN OUR IDEAS ABOUT MONEY WITH THE **IMPLICATIONS** (OR DERIVED HYPOTHESES).

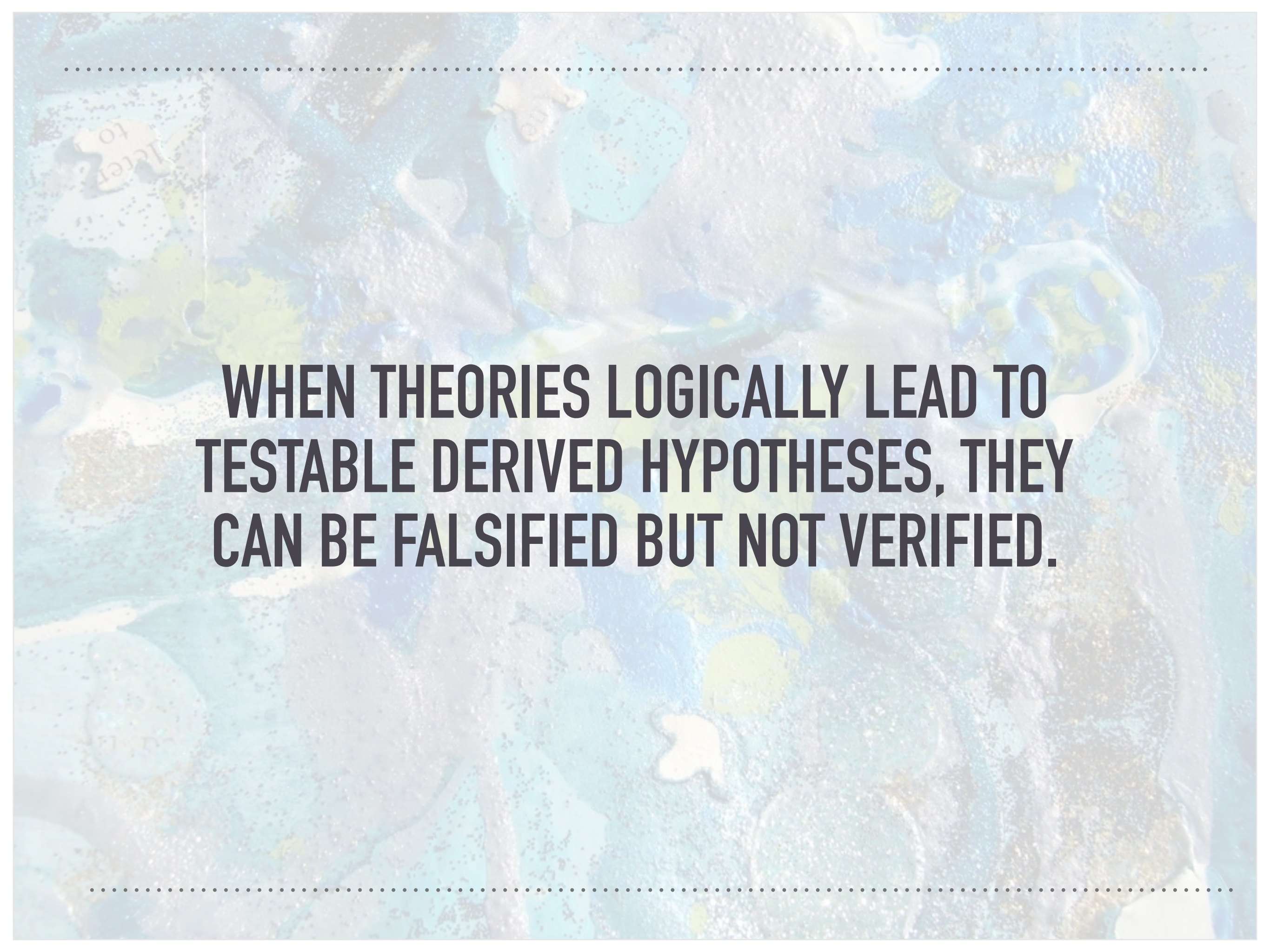
- A.** "THE EMERGENCE OF WIDESPREAD SPECIALIZED OCCUPATIONS MAKES BARTER INEFFICIENT AND PAVES THE WAY FOR A MONEY SYSTEM TO DEVELOP."
- B.** "SOCIETIES WITH A HIGH DEGREE OF OCCUPATIONAL SPECIALIZATION ARE MORE LIKELY TO HAVE INDIGENOUS MONEY THAN THOSE WITH LOW SPECIALIZATION."

Statement A is a theoretical statement. Why?

- It talks about mechanism.
- It uses a causal phrase – in this case, "paves the way."
- The mechanism and the change processes are not directly observable.

Statement B is a hypothesis. Why?

- It follows from the theory.
- All the constructs in it are observable and testable.



**WHEN THEORIES LOGICALLY LEAD TO
TESTABLE DERIVED HYPOTHESES, THEY
CAN BE FALSIFIED BUT NOT VERIFIED.**


WHY DOES A SUPPORTED HYPOTHESIS NOT VERIFY A THEORY?

The answer is simple: theories make assertions about mechanisms and causality that are not directly observable. For this reason, not all of the statements in a theory can be verified.



WHAT IF A HYPOTHESIS IS NOT SUPPORTED?

If hypotheses are derived from a theory that is logical and consistent, and the hypotheses are not supported, we are entitled (assuming the study was well-designed) to conclude that the theory is probably not correct.



**ALTHOUGH THEY
CANNOT BE PROVEN TRUE,
THEORIES WITH MEASURABLE
CONCEPTS AND LOGICAL HYPOTHESES
ARE WORTH INVESTIGATING. ★**

If a theory can be defended with strongly supported hypotheses, it may represent the true nature of the tested relationship.

If a theory is defeated by an unsupported hypothesis, then it will inspire different theories and hypotheses that will push understandings of the topic.



ADDITIONAL TERMS:



WHEN READING CROSS-CULTURAL STUDIES (OR CONDUCTING ONE YOURSELF), HYPOTHESES MAY ALSO BE STATED IN TERMS OF THE **NULL HYPOTHESIS** AND **ALTERNATIVE HYPOTHESIS**.

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A **null hypothesis** assumes that there's "nothing going on": there's no association between your variables, no interesting differences to be noted. An **alternative hypothesis** states the opposite, that there is something going on: your variables are related or there are important differences to be noted. When people state a hypothesis by itself, it is usually the alternative hypothesis. We can decide whether each of these hypotheses is supported or rejected through the use of appropriate statistical analyses. The mechanics of this process will be covered in a later section.

FINALLY, WHEN A HYPOTHESIS IS REPEATEDLY SUPPORTED WITH EMPIRICAL ANALYSIS (FOR EXAMPLE, STATISTICAL ASSOCIATIONS), IT IS CONSIDERED A LAW. BELOW IS A TABLE SHOWING THE DIFFERENCES BETWEEN LAWS AND THEORIES.

Laws (Verified Hypotheses)	Theories
Every concept has a clear method or means of empirical measurement.	At least some concepts or ideas cannot be measured.
Can be generalized from empirical data; can be true even if the theory implying it is false.	Can be suggested by data but cannot be verified even when hypotheses are supported.
Formulated into a single statement.	Usually complex, consisting of a series of related statements.
Explain a narrower range of phenomena.	Provide explanations of laws; generally explain a wider range of phenomena.
Accepted as “true” when repeated studies produce the same results.	Considered a plausible explanation when considerable evidence lends support.

SUMMARY

- Certain assumptions underlie the answers a researcher expects and inherently form the basis of almost every posited research question.
- It is important to try to **spell out your own ideas** in a logical and coherent way even before conducting a literature review to see what other researchers have put forward.
 - The first aim is to **formulate a theory**
 - The second aim is to **derive testable hypotheses**
- HRAF's *Explaining Human Cultures* (<http://hraf.yale.edu/ehc/>), although not yet complete, provides a tool through which researchers can explore earlier cross-cultural literature (including tested hypotheses).
- A **theory** is an idea (or system of ideas) that aims to explain a phenomenon or phenomena. In cross-cultural research, theories often attempt to explain diversity or universality of particular cultural phenomena or traits. Theories contain unobservable constructs and are not completely verifiable.
- **Hypotheses** are explicit, concrete predictions (usually derived from theory) that can be tested.
 - **Theoretical hypotheses** are more abstract
 - **Operational hypotheses** contain explicit measures
- Theories, because they have some unobservable constructs or mechanisms, **can be falsified but not verified or proven**.
 - Assuming that a study is well-designed, **unsupported hypotheses should lead us to question the theory from which they are derived**
 - Theories that are **supported by repeated tests** can come to be considered plausible
 - Theories **help us to explain verified hypotheses or laws**
- **Hypotheses can be supported or rejected based on the results of statistical tests.** If supported with repeated studies, they have the potential to become “laws”, which are accepted as true.

CITATION AND TERMS OF USE

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