A Hierarchy of Theory Validation

All theories, to be valid in psychological research, must undergo a series of critical phases that inevitably end with a justification for the theory or a discarding of the theory. I see confusion about what this process entails and will try my best to outline the logical points in how the validation of theories can offer new knowledge to the fields in which you hope to collect evidence. These steps are not always completed by an individual researcher—literature reviews help researchers establish their rationale for "skipping" steps of sorts. Also, as theories evolve, this process occurs in iterative loops rather than in a simple linear pattern.

Step 1: What level of organization is driving your research?
The level of organization that drives psychology is our quest to understand individuals' functioning in the world. Other fields focus on levels of context (e.g., sociology focuses on issues that range from macro to micro contexts, anthropology usually focuses on more micro contexts, and political science/economics usually focuses on macro contexts). Psychology assumes that the individuals' functioning is a context in its own right, yet it is one that interacts with other "contexts".

Step 2: What assumptions are guiding the state of theorizing in your field of interest?
The field of motivation, for example, is grounded in the assumption that individuals have a level of agency in choosing how to function in different settings and that their choices are influenced by experiences that exist outside as well as inside themselves (intrapersonal and interpersonal functioning as it is influenced by intra-contextual and inter-contextual processes). Nevertheless, direct, controllable forms of agency are those factors that are understood by the individual in both idiosyncratic and patterned ways. Research is about discovering and explaining patterns. Investigators need to defend their assumptions about what patterns are important to study and why.

Step 3: What variables are necessary for assessing the operating assumptions in your field of study?
Anytime you make a decision about what concepts or constructs are related to one another in a theoretical way, you will need to establish that the collection of variables and only that collection is important for understanding the psychological question you are addressing.

Step 4: How have you verified that the concepts or constructs you are focusing on are in fact related to one another? Remember that no study can fully test a theory, but data can support propositions or fail to support such propositions.
Research is an inherently descriptive task. It usually begins with descriptive or correlational research designs where each variable is measured independently, and the results are compared with one another. This is a step that many who engage in rhetorical argumentation would like to skip, but it is essential before moving forward in the validation of theoretical claims. Variables may show high degrees of agreement, inverse relations, or no relation and all three kinds of description are ideally important in a strong descriptive research design. Reviews of existing literature may be one of the easiest ways to establish that variables are related to one another in patterned ways. We also know through repeated explorations, for example, that emotion, cognition, and behavior are such highly correlated processes that we can assume relations between these levels of functioning.
Step 5: What factors allow you to explain the relations you have observed between variables?
Only after verifying that concepts and constructs are related to one another is it possible to start explaining why those relations occur as they do. The challenge at this step is to identify reasonable explanations that are not simple tautologies (e.g., two different names for similar ideas and using one to "explain" the other is not a viable explanation, although you will see that this occurs commonly in the literature.) At this point, it is problematic to include too many potential explanations in the same research study/design. Confounding variables (e.g., variables you may have forgotten to consider or those you are aware of but have not controlled) can readily interfere with the viability of an explanation. Similarly, design confounds can, and often do, undermine the validity of an explanation. Each possible explanation is tested independently. To accomplish this goal, researchers are sometimes expected to include multiple studies in a single manuscript, illustrating ways in which they have anticipated, evaluated, and ruled-out alternative explanations as well as verified the valid explanations.

Step 6: Have you tested all facets of the theory and explained all relations between variables?
Using an iterative process of considering possible variables in relation to the theoretical models that emerge from a theory, researchers who have been exploring a problem for a long time are able to see which parts of their theories have been well-established, and which parts have not been validated. It is common for theories to undergo revision in an iterative manner as well. This would necessitate a movement back to the earliest descriptive phases and new explanatory phases of a research program.

Step 7: Have you found the most parsimonious explanation for the relations that are central to the theory in question?
Ideally, this is a question that is kept in the forefront of a researcher's mind at every step of the process. Sometimes, however, it is only at the end of a theoretical validation process that researchers are able to fully consider the entire theory and its ramifications. IF a theory is the most parsimonious, THEN it may be reasonable to design intervention studies for use in practical settings. Note that this is pretty late in the empirical-verification process and many practical problems will need more immediate solutions. Ideally, professionals remain in dialogue between available research evidence and the practical issues that they face in the field. (E.g., theories of learning continue to be refined and strengthened, yet we continue to teach students things we hope they will learn.)

AS GRADUATE STUDENTS, THE MOST PARSIMONIOUS MEANS OF ENTERING THE FIELD OF RESEARCH IS TO WORK WITH AN EXISTING THEORY AND SCHOLARS WHO HAVE BEEN WORKING WITH THAT THEORY. A DISSERTATION IS TYPICALLY FOCUSED ON ONE OF THESE STEPS. IT IS IMPORTANT TO UNDERSTAND WHERE THE FIELD HAS PROGRESSED WHEN EXPLORING A THEORY IF YOU ARE TO ADD NEW KNOWLEDGE TO THE FIELD. THIS COMBINATION OF FACTORS RESULTS IN THE PRESSURE YOU MAY EXPERIENCE TO FIND A THEORETICAL POSITION WHEN YOU ARE REVIEWING RESEARCH.