will be used by comparativists. The danger is that if the research is not framed within a standardized structure, the research will be forced into one, and likely misrepresented. With that in mind, it is probably best to conduct research assuming that the data will be used for comparisons even if that is not the immediate intention.

Modern research in the sister biological discipline of systematics (the study of diversification and relationships of life on earth) provides a clear lesson that relates to the long-term value of these sorts of studies. Systematists are returning to stored biological specimens in herbaria and museums to verify species identities with genetic, anatomical, chemical, and other physical analyses. Studies which generate lists of names/terms must be supported by the deposition of appropriate physical evidence in a secure storage facility. This physical evidence is now a requirement of publication within ethnobiological journals (e.g. Verpoorte 2009). Therefore, modern ethnobiological research increasingly relies upon an evidence-based system that blends quantitative and qualitative data collection (Cook and Prendergast 1995; Alexiades 1996) and analysis in the testing of one or more hypotheses about dynamic relationships between peoples, biota, and environments.

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12.1.2 Evidence-based research

Ethnobiological studies, including research on languages, requires evidence. This evidence may be primary/physical, secondary/documentary, or tertiary/observational. While all three of these are important, the first is the most critical. Unfortunately, primary/physical evidence is most often neglected by non-biologists who are doing ethnobiologically-related, ethnographic research.

Primary or physical evidence of language is a sample of the things that people are talking about such as specific birds, plants, insects, rocks, soil, water, or diseases (when samples are collected). These samples are typically stored as catalogued, labelled vouchers in a museum, archive, or other repository designed to maintain them for long periods of time. These facilities also provide appropriate access to scholars and the public so that research results may be verified by others once work has been published.

It is completely understandable that many scholars feel overwhelmed when faced with the need to collect physical samples of evidence from a wide spectrum of things. However, without such evidence, the results of the research are merely hearsay (Bye 1986). Modern science requires verifiability, and this means that other researchers must have a way to check the results by examination of the samples returned from the field site (see Conn, Chapter 11 above, on the collection of samples). In addition, the Biodiversity Assessment of Tropical Island Ecosystems manual (Mueller-Dombois, Bridges, and Daehler 2008) is available in print or for free on-line and includes detailed instructions for non-biologists on how and why to collect a wide range of biological samples. An excellent resource for collection of plants is Womersley (1976), which was specifically prepared for anthropologists and geographers.

Secondary or documentary evidence of language includes photographs and video and audio recordings. These are critical tools for modern ethnobiological researchers, but in most cases they are insufficient for the positive scientific or cultural identification of the items that people are talking about. This is because they cannot record the genetic or other biochemical, morphological, anatomical, viscosity, or the many other physical characteristics that cultural and scientific experts need to assess in order to identify and distinguish samples. However, documentary evidence supplements primary evidence, as it often provides important information about a sample that is lost because of changes that occur due to sampling, decay, or removal from the natural environment.

Tertiary data or observations about a sample are important for establishing the context in which the sample normally resides. The best observations include a combination of etic[2] and emic perspectives and multiple
p. 287 scales from the most immediate/local to the landscape in which the sample resides. For example, a ↳