THE FUTURE OF ETHNOPHARMACOLOGY: SEEKING A TRANSDISCIPLINARY AND CULTURALLY GERMANE SCIENCE

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Summary
This chapter discusses the efforts and difficulties to accommodate and integrate the diversity of disciplines and goals that compose the field of ethnopharmacology. Perspectives and future trends on ethnopharmacology research are discussed, including advances in laboratory and clinical sciences, the meaning of traditional dietary prohibitions and prescriptions, research implications of dosage schedules used for traditional remedies, ecological factors, ethical and socioeconomic issues and the multicontextual use of plants.

1. Introduction: Defining Ethnopharmacology

A primary difficulty in projecting a future for ethnopharmacology is to identify the objectives of a largely virtual field whose self-identified membership represents a diverse suite of academic and applied disciplines, as well as commercial interests. In earlier times ethnopharmacology was an endeavor characterized more by folkloristic than scientific inquiry; today it is heavily represented among published investigators trained in Pharmacology, Anthropology, Botany, and Pharmacognosy. Contributions are made as well by historians of science, clinicians, ethnographers, agronomists, biochemists, researchers in veterinary medicine, and others. This multivocality frustrates efforts to harmonize objectives and integrate methodologies; at the same time, it creates a dynamic tension that encourages dialogue.
1.1. The International Society for Ethnopharmacology and the Journal of Ethnopharmacology

This essay is part of that dialogue and projects the perspective on ethnopharmacology that was articulated in the formation of the International Society for Ethnopharmacology (ISE). This perspective is reinforced in the objectives of the organization’s journal, which serves as a gauge of what ethnopharmacology constitutes. The *Journal of Ethnopharmacology* (JEP) was inaugurated in 1979 with a statement of mission that defined ethnopharmacology as “a multidisciplinary area of research concerned with the observation, description, and experimental investigation of indigenous drugs and their biological activity.” The statement of scope emphasized the balance and breadth of disciplinary representation across a range of natural and social sciences:

*The Journal of Ethnopharmacology will publish original articles concerned with the observation and experimental investigation of the biological activities of plant and animal substances used in the traditional medicines of past and present cultures. The journal will particularly welcome interdisciplinary papers with an ethnopharmacological, an ethnobotanical, or an ethnochemical approach to the study of indigenous drugs. Reports of anthropological and ethnobotanical field studies fall within the journal’s scope. Studies involving pharmacological and toxicological mechanisms of action are especially welcome.*

2. Objectives of Ethnopharmacology Research

Mission statement aside, after the first few years of the journal’s existence, the majority of articles published in the JEP were not interdisciplinary. In view of the highly skewed over-representation of pharmacology and pharmacognosy in the contents, one could argue that the JEP failed to establish the unique position it sought among journals concerned with natural products. Privileging the pharmacologic assessment of plants reproduces the Euro-American traditions of imperial expansion that have been fueled by the imagination that indigenous populations can only benefit from the transposition of western ideologies and technology. Embedded in this is the, at least implicit, notion that medicines become meaningful only when validated by pharmacologic inquiry. In the spirit of an integrated ethnopharmacology, pharmacology should instead serve as another lens through which to understand how people manage resources and health. On the other hand, a positive outcome has been methodological advances in the bioscientific exploration of traditional medicines that identified active compounds, with the objective to refashion indigenous medicines into suitable “new” botanical drugs or isolate compounds to develop as entirely new drugs.

2.1. Critical Reviews and Challenges for an Integrated Ethnopharmacology

Since the early 1990s, various critical reviews of the field of ethnopharmacology challenged researchers to strive for a more holistic, theory-driven, and context-sensitive study of the pharmacologic potential of (largely botanical) species used by indigenous peoples for medicine, food, and other purposes. The foundation of these critiques is that much of what is reported as ethnopharmacologic research is comprised by decontextualized catalogues of plants and lists of phytoconstituents and/or pharmacological
properties. While this work is technically-competent bioscience, it lacks synthesis—only a
very small percentage of ethnopharmacology researchers reflect on the range of botanicals,
ethe environments from which they are drawn, and the diverse chemistries they embody.
Also, there is little incremental growth of knowledge within and beyond this corpus of
evidence. Intellectually and substantively, each study is a stand-alone. Many laboratories
are satisfied to report the results of the 15 or 20 species examined and then, rather than
build on that knowledge, test the therapeutic potential of another group of plants against the
same, or even a different, biological target. Few researchers in ethnopharmacology seem to
be interested in the people whose knowledge and identity are embodied in these plants.
While some studies are based on plants drawn from indigenous pharmacopoeias, most of
what is published as ethnopharmacology has a weak, if any, ethnographic component.
While laboratory-exclusive studies provide valuable baseline data, they disappoint from the
standpoints of both practice and theory—a small percentage of researchers seek to make
order of the iterative lists of active plants and their constituents, and fewer still offer
theoretical advances. Further, only a small number of these studies offer insights into the
experience of real people in specific cultural and eco-political settings, or project the
findings against some higher level of abstraction that helps us to understand human-plant
interactions. On the basis of these critiques, as well as deliberations within and outside the
ISE, in 2001 the JEP Board issued a revised mission statement to underscore the
importance of integrated, theory- and issue-driven research in ethnopharmacology:

The Journal of Ethnopharmacology publishes original articles concerned
with the observation and experimental investigation of the biological
activities of plant and animal substances used in the traditional medicine of
past and present cultures. The journal will particularly welcome
interdisciplinary papers with an ethnopharmacological, an ethnobotanical or
an ethnochemical approach to the study of indigenous drugs. Reports of
anthropological and ethnobotanical field studies fall within the journal’s
scope. Studies involving pharmacological and toxicological mechanisms of
action are especially welcome. Clinical studies on efficacy will be considered
if contributing to the understanding of specific ethnopharmacological
problems. The journal also welcomes review articles in the above mentioned
fields especially on novel methodologies relevant to disease states.

The ISE President’s editorial stressed the importance of addressing the social and political
implications of research design and application, especially for indigenous peoples whose
knowledge and resources have been appropriated in the course of natural products
development, which largely benefits the West. It was further emphasized that
ethnopharmacology research should be understood within the broader context of
biodiversity conservation, sustainable resource management, and intellectual and biological
property rights. This revised statement better reflects contemporary circumstances and
globalization processes in which indigenous people’s ideologies and material cultures
become increasingly commoditized and politicized on a scale of global proportions. This
broad, integrated vision of ethnopharmacology has substantial potential for scholarly and
practical advances in the next decades. It remains to be seen whether this is a mandate that
will shape research into the future, or whether—as has occurred in the past—this statement
resonates the collective culture of the ISE but not necessarily the individuals who identify
with that entity.
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**Biographical Sketches**

**Nina Etkin** is Professor and Graduate Chair, and directs the Medical Anthropology Program, at the University of Hawai`i-Manoa. Her research centers on two domains that are linked through a co-evolutionary theoretical perspective: (1) Studies of ethnomedicine juxtapose ethnographic data on the cultural construction and social negotiation of health to pharmacologic assessments of indigenous plant medicines and foods, in northern Nigeria, eastern Indonesia, and Hawai`i. (2) Investigations of human biological variability focus on the pathophysiology of inherited red blood cell disorders and their protection against malaria infection. Professor Etkin has published extensively, forging intellectual and practical links to understand the dialectic of nature and culture in diverse ecologic and ethnographic settings. She has just completed a book entitled *Edible Medicines: An Ethnopharmacology of Foods*. Her edited volumes include *Eating on the Wild Side* (1994, University of Arizona Press), *Plants for Food and Medicine* (1998, Kew Royal Botanic Garden), *Medicines: Meanings and Contexts*. 1994, University of Amsterdam Press), and *Plants in Indigenous Medicine and Diet* (Gordon and Breach Science Publishers, 1986). Professor Etkin is past President of the International Society for Ethnopharmacology.

**Dr. Elaine Elisabetsky**, Ethnopharmacologist and Professor at the Federal University of Rio Grande do Sul (Porto Alegre, Brazil) researched and taught for ten years in the Brazilian Amazon. Her focus of research includes ethnopharmacology among caboclos (rural peasants), Amerindian Peoples (Guajajara and Kayapó), and rubber tappers (extractive reserves), conservation and sustainable development. She has given specific attention to locally held concepts of health and disease, and stresses that a culturally relativistic perspective is necessary in conducting ethnopharmacologic field and laboratory work. She has developed plant selection criteria that combine traditional knowledge and a working hypothesis for pharmacological scrutiny aiming to maximize the potential for successful drug development based on ethnopharmacologic collections. She specializes in identifying and characterizing psychopharmacological properties of medicinal plant extracts or isolated compounds. She has been President of the Brazilian Society of Ethnobiology and Ethnecology, and International Society for Ethnopharmacology, and was a founding member for the International Society of Ethnopharmacology and the International Society of Ethnobiology. She is a member of the editorial boards of the *Journal of Ethnopharmacology*, *Phytomedicine*, *Pharmaceutical Biology* and *Revista Brasileira de Plantas Medicinais* and *Evidence Based Alternative and Complementary Medicine*. 

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