THEORIZING ABOUT AGENCY, GENDER AND ENVIRONMENT IN THE CONTEXT OF MONETARY PRODUCTION AND LIVING SYSTEMS*

Zdravka Todorova

Introduction

Ecological economics recognizes that "humans and their economies are parts of natural ecosystems and coevolve with those natural systems" (Stephen Ferber and Dennis Bradley 1995: 1). Changes in the composition or functioning of ecosystems are a part of life processes. Human-induced or human-accelerated ecosystem disturbances can be mapped, together with changes in material provisioning processes, and hence are subject to human agency. The organization of material provisioning is a process of cumulative change in habits of thought. Human-induced or human-accelerated ecosystem disturbances have the propensity to affect, for example, public health, as Eric Chivian writes, through the "threat, prevalence or incidence of infectious diseases¹ directly or indirectly through their impact on the biodiversity of infectious agents, reservoirs, and vectors" (2003). The methods that a given society develops to cope with the effects of ecosystem disturbances result from its evolving habits of thought, including gender specification.

In her article "Development, Gender and the Environment" (1996), Eiman Zein-Elabdin argues that the relationship between women and the environment can be understood only within the institutional contexts in which the two interact and in which development takes place. She critiques both the "women in development" (WID) approach taken by international financial institutions, which perceives women as readily responding to economic incentives² and the ecofeminist perspective, which tends to view women as having a special understanding of the environment.³ Zein-Elabdin (1996: 929) argues that both approaches fail to account for gender specification as an institution. She (1996: 930) defines gender specification as the "social designation of individuals to a particular gender and the historically and culturally circumscribed economic and social roles contingent upon that designation," and she believes the concept is useful for

1

capturing the relative positions of women and men in the economy and in relation to the environment (Zein-Elabdin 1996).

One way of understanding the relative positions and vulnerabilities of people in the socio-economic structure is as a consequence of an evolutionary process Thorstein Veblen (1969 [1919]: 241) describes as a "cumulative sequence of habitation." The process of cumulative change with respect to socio-economic structure is "the sequence of change in the methods of doing things, the methods of dealing with the material means of life." (Veblen 1898: 391). These methods or "habits of thought" are part of cumulative institutional change. As Zein-Elabdin explains, her concept of gender specification "is based on Veblen's concept of institutions as 'habits of thought" (1996: 942).

Habits of thought or, as Veblen calls them, "habitual methods of procedure," (1898: 393) require human intelligence and involve variation. Such habits are not the same as routines, which consist of repetitive acts, and imply automata. Geoffrey Hodgson (2002) brings attention to human agency and critiques social theory approaches that treat individuals as automata.

The present paper is a contribution towards a framework for a gendered approach to ecosystems and social provisioning that is grounded neither in methodological individualism nor in methodological collectivism. This framework seeks to incorporate living systems, human agency, and habits of thought and structural transformation. The concepts of structure and agency are invoked here as a way to relate some contemporary methodological debates formulated in these terms to habits of thought and living systems.

Concerns about Universal Theorizing

According to Zein-Elabdin, both the WID and the ecofeminist approaches imply that women possess some universal, essentialist character.⁴ She argues that this assumption leads to "muting the varied social settings of environmental problems and women's responses to them" (Zein-Elabdin 1996: 942). Her conceptual framework for "redrawing this discourse, particularly with regard to the treatment of gender" (Zein-Elabdin 1996: 929), is based on the proposition that gender discussion must be "firmly grounded in an institutionalist understanding of economic and social processes." She further argues: because of the historical and cultural specificity of institutions and processes, there is no basis for a theoretical discourse on development, gender, and the environment, but only a contextual analysis of the multiple points where development, women, and the environment meet and interact (Zein-Elabdin 1996: 930). Thus, addressing the WID and the ecofeminist approaches, Zein-Elabdin concludes

...the areas of development, gender, and the environment can be juxtaposed only to the extent that they interact within specific historical and cultural institutional contexts rather than in an abstract theoretical domain (1996: 942).

I will note, however, that an emphasis on institutional specifics can be compatible with a certain level of generalization. This compatibility between the specific and the general exists, for example, when feminists theorize about more or less stable macroeconomic and global structural conditions. Macroeconomic global trends are related to local livelihoods and occur via particular habits of thought regarding international relations, budgeting, and public policy. Thus, when ecofeminists conduct specific contextual analysis, they must also pay attention to general theories about global macroeconomic and political relations.

Further, there are no obstacles to preserving the importance of historical and cultural specifics while recognizing a general interdependence between biological organisms and ecosystems and between interdependent changes of habits of thought and ecosystems. As discussed below, these generalizations are crucial for conceptualizing human agency.

Finally, as both Tony Lawson (1999; 2003)⁵ and Geoffrey Hodgson (1999; 2002) argue, concerns that universal theorizing may be misleading should not eliminate discussions about method, namely about the perception of reality,⁶ epistemology, and social theory in feminist ecological economics. Like Zein-Elabdin, Hodgson (2002) challenges universal approaches to economic theorizing and favors contextual analysis. But in his attention to historical, cultural, and geographical specifics he emphasizes the importance of abstract discussions on structure and agency.

Living Systems, Bodies, and Agency

The debate over agency and structure comes from the critiques of "methodological individualism" and "methodological collectivism."⁷ The first method, as Hodgson (2002: 160) points out, claims to explain social phenomena exclusively in terms of individuals, and the second purports to explain social phenomena solely in terms of structures or wholes. Hodgson criticizes both methods and argues that neither individuals nor institutions can be the final explanatory determinant (Hodgson 2002: 166). He (2002) emphasizes the common points between Structurationists, Critical Realists, and Institutionalists and appends to the contemporary debate on structure and agency the argument that "[i]t is not simply the individual behavior that has been changed: there are also changes in habitual dispositions. In turn, these are associated with changed individual understandings, purposes and preferences" (Hodgson 2002: 172): He continues:

[T]here are no mysterious 'social forces' controlling individuals, other than those affecting the actions and communications of human actors. People do not develop new preference, wants or purposes simply because 'values' or 'social forces' control them. What does happen is that the framing, shifting and constraining capacities of social institutions give rise to new perceptions and dispositions within individuals. Upon new habits of thought and behaviour, new preferences and intentions emerge

Human novelty and unpredictability lie at the center of Hodgson's (1999: 145) emphasis on the distinction between automata and human beings. For Hodgson, bringing emotional and institutional factors into preference functions is problematic when accounting for agency. As Julie Nelson (2003: 62) notes, in such an approach, "if values exist, they must exist as universals, as theoretical invariants, lying out there somewhere waiting to be discovered." The individual preference function becomes immutable (Hodgson 2002: 176). "The preference function is already 'there'; ready to deal with unpredictable and unknowable circumstances" (Hodgson 2002: 176). When ecological problems are reduced to subjective utilities, human beings are reduced to automata; the role of agency is obscured, since people's minds and their ability to learn are nullified.

We usually find such dualisms as mind-body and reason-emotion underlying a reliance on substitutes for agency. Further, these dualisms lead to a division between humans and nature, which prevents us from perceiving people as organic elements of ecosystems. As argued by John Dewey (1988 [1922]: 60), the conceptual isolation of people from nature is "duly manifested in the split between mind and body – since body is clearly a connected part of nature." Dewey opposes this particular split in his *Human Nature and Conduct* [1922] (1988).⁸ Body-mind dualism, which provides the basis for both biological determinism and social determinism, presupposes that the mental action of the individual takes place separately from the body. In biological determinism, the mind is ignored, while social determinism leaves little room for nature.

In contemporary cultural studies "the body" has become a focus of interest for gender researchers who have analyzed it as a social construction, as a text, and as having meaning (Sheila Greene 2003: 75). While accepting that there is much to be gained from a discourse on the meaning and representation of the body, Greene (2003: 73) usefully notes that such theorizing does not actually address the reality of the biological body. The meaning of "body" is seen as culturally specific and it becomes almost imaginary. On the other hand, biological determinism with its implicit "recognition" of the body has not been informative about specific personal vulnerability, but as Greene notes (2003: 74), has served as "dubious scientific" justification for social gender designations.

Inquiries in feminist ecological economics benefit from the conceptualization of living bodies.⁹ For her purposes, an analyst might complement the social aspects of gender specification with the biological aspects of gender without guilt of essentialism. Biological gender characteristics (for example, as they pertain to the effects of toxic waste or other pollution on fertility, pregnancy, breastfeeding, and child bearing) help create understanding about the relative positions of people in their ecology and their vulnerabilities to ecosystem disturbances. A preference-based approach is unable to emphasize biological gender specifications that could be relevant for studying ecological vulnerability. Such an approach "lacks criteria for distinguishing individuals from one another" (John Davis 2004: 6). A framework that does not allow for variation in persons

5

does not support feminist economists' concern about universal theorizing. As William D. Williams (2004: 11) notes: The preference system approach is biologically uninformed and incompatible with the life process. To account for a living system, one needs a hierarchical structure. Conceptualizing habits of thought brings to analysis a conception of agency that is consistent with living systems.¹⁰

Habits of thought are dynamic: "... [T]he point of departure, at any step of the process, is the entire organic complex of habits of thought that have been shaped by the past process" (Veblen 1898: 393). "...[E]ach new situation is a variation of what has gone before it and embodies as causal factors all that has been effected by what went on before" (Veblen 1969 [1919]: 242). Variation and agency are intertwined. Hodgson warns: "If human beings are more than automata they are not merely programmed responders to external stimuli; their actions cannot always be predicted" (Hodgson 1999: 145). The idea of institutions merely as incentives is, however, the predominant policy approach to development, gender, and the environment, and it has led to the notion that institutional reform is sufficient to facilitate individual choices.

A number of theorists have argued against this reductionist approach to human agency, including Hodgson (1999: 37), who notes, "By reducing all transactions to the mutual enhancement of 'utility' ... one ... cannot understand the phenomenon of the commodification of human relations, let alone explore its consequences." Hodgson (2002: 176) also draws attention to money as an institution, which "imbues people with pecuniary habits of calculation and comparison," citing Wesley Mitchell's (1937: 371) work. It is Mitchell who contends that the institution of money "affects our very ideals of what is good, beautiful and true" (1937: 371) and calls the "money economy.... one of the most potent institutions in our whole culture."

Monetary production, ecosystems, and gender specification

Analysis of money as an institution could facilitate an understanding of the conflict between production and livelihood in the context of monetary production within ecosystems. In a monetary production economy, in which the creation of livelihoods is incidental to the process of making money (see Thorstein Veblen 1923; Dudley Dillard 1980), human survival (which presupposes ecosystem survival) is incidental to making money. Human-induced ecosystem disturbances that have negative social, biological, and psychological effects on humans are interrelated with the monetary organization of provisioning. For example, as Williy Douma, Heleen van den Homberg, and Ange Wieberdink (1994: 84) documented in the mid 1990's, the introduction of coffee growing in the Andes Mountains in Colombia, as a response to the country's external debts and neoliberal policies that were aimed at opening up markets and increasing exports, resulted in clearing forests and halting the growing of subsistence crops, causing a reduction in the region's biodiversity. The consequences of this ecological disturbance included an impoverished diet and alterations in the division of labor between men and women resulting in heavier work burden for women.

The institution of money and finance at the macro level represents particular habits of thought in the global context. For example, Peter Dorman (2004) displays the relationship between external debt and deforestation,¹¹ confirming that natural, less commodifiable forest values are ignored in favor of "unnatural" financial constraints. "Why should the financial process bias the direction of development away from the preservation of ecological values?" Dorman asks (2004: 214).¹²

In order to address this question and similar ones and relate them to power relations one needs not only local understanding of gender specifications but also some theoretical explanation of global macroeconomic trends and the habits of thought behind them. For example, as a result of patent laws and the legal protection of intellectual property rights, farmers in developing nations have to *pay* for new varieties of crops in money units of account and, further, they must obtain the credit or the money tokens in order to be able to pay.¹³ Money as an institution represents power relations,¹⁴ which also have gender content.

Zein-Elabdin's concept of gender specifications (1996: 942) is intended to legitimate "the role of gender in determining the relative economic and social positions of women and men in society," thus facilitating discussion of power relations. She argues that power relations can be revealed only in concrete institutional analysis (1996: 941).¹⁵ Further, Zein-Elabdin emphasizes that overlooking gender specifications can obscure power relations (1996: 931). The concept of gender reveals the difference between

7

women and men with respect to their usual tasks and vulnerability to ecological change and the effects of monetary production.

Nelson (2003: 60) identifies as a habit of thought the assumption that "children and people in other stages of vulnerability will be 'naturally' cared for, at low cost, by unpaid relatives," usually women. Greene (2003) argues that "women's destiny as mother, homemaker and nurturer" has been seen as "forever tied to the fulfillment of her body's design and its needs" (76). Public budgets will be inadequate for the needs of citizens, if "care" is "naturally" perceived not as a public concern, but as the private responsibility of families and women.¹⁶

It can be argued that budgeting and macroeconomic policies are often ceremonially locked in to such habitual reasoning. When faced with ecological disturbances and their effects on public health, for example, the institutional adjustment of changes in habits of thought cannot take place instantaneously. Consequently, the conditions of possibility for transforming the institutionalized response to ecologic disturbances are related to the likelihood of understanding, elaborating, and transforming habits of thought that are at the basis of global and domestic public policy.

Conclusion

The discussion about habits of thought and gender specifications leads to the following propositions addressing the relationships between ecosystems, gender, and provisioning. First, analyses of the living systems comprised by interdependent organisms are necessary when theorists discuss social provisioning within ecosystems. A perception of living, interdependent organisms is necessary for analyzing gender conflicts within ecological and social systems of production and provisioning. This perception includes abandoning traditional, dualistic conceptualizations of humans and nature, which do not allow people to be conceptualized as organic elements of ecosystems. Second, body-mind dualism presupposes that the mental action of individuals takes place separately from their bodies. This assumption prevents theorists from simultaneously addressing biological gender specification and social gender specification as identifying vulnerabilities to ecosystem disturbances. Further, this dualism facilitates an artificial theoretical and practical breach between financial (as intelligent) and ecological (as natural) concerns. These propositions do not interfere with feminist and institutionalist concerns about universalizing, and they allow for historically and culturally informed theories. More importantly, they do not exclude human agency and the possibility of structural transformation, concepts that have been at the center of contemporary social scientific inquiry.

May 2004

* A version of this paper is forthcoming in *Feminist Economics* under the title "Habits of Thought, Agency and Transformation: An Institutional Approach to Feminist Ecological Economics."

Zdravka Todorova, University of Missouri – Kansas City, Economics Department, Haag Hall 211, 5100 Rockhill Road, Kansas City, MO 64110 e-mail: <u>todorovazd@umkc.edu</u>

Zdravka Todorova is a doctoral candidate in the Department of Economics at the University of Missouri – Kansas City, where she is a Distinguished Doctoral Dissertation Fellow (2005 -2006). In 2004 – 2005 she was the Fisher Center for the Study of Women and Men pre-doctoral fellow at Hobart and William Smith Colleges, where she taught Gender Dimensions of Finance and Budgeting, and Political Economy of Globalization. Todorova participates in the Program on Knowledge Networking and Capacity Building on Gender, Macroeconomics, and International Economics.

ACKNOWLEDGMENTS

I would like to express my gratitude to two anonymous referees for their valuable suggestions, Fadhel Kaboub and the late Professor William D. Williams (Economics Department and Social Science Consortium at the University of Missouri – Kansas City) for reading a draft of this paper and making insightful comments. The remaining errors are mine.

REFERENCES

Agarwal, Bina. 1992. "The Gender and Environment Debate: Lessons from India." *Feminist Studies* 18 (1): 119-58.

_____. 2000. "Conceptualizing Environmental Collective Action: Why Gender Matters." *Cambridge Journal of Economics* 24 (3): 283-310.

- Archer, Margaret. 1995. *Realist Social Theory: the Morphogenetic Approach*. Cambridge: Cambridge University Press.
- Bell, Stephanie and John Henry. 2001. "Hospitality Versus Exchange: the Limits of Monetary Economies." *Review of Social Economy* 54 (2): 203-26.
- Chivian, Eric and Aaron Bernstein. 2004. "Embedded in Nature: Human Health and Biodiversity," *Environmental Health Perspectives*, 112 (1): A12 – A13.
- Chivian, Eric, ed. 2003. *Biodiversity its Importance for Human Health: Interim Executive Summary*. <u>http://www.med.harvard.edu/chge/Biodiversity_v2_screen.pdf</u> (accessed April 2005).
- Davis, John. 2004. "The Individual in Economics," presented at the Cambridge Realist Group, November 24.
- Dewey, John. 1922. Human Nature and Conduct. Repr. The Middle Works, 1899-1924, Volume 14. Edited by Jo Ann Boydston. Carbondale and Edwardsville: Southern Illinois University Press, 1988.

Dillard, Dudley. 1980. "A Monetary Theory of Production." Journal of Economic Issues. 16 (2): 255-275.

- Dorman, Peter. 2004. "Debt and Deforestation," in Jonathan Harris and Neva Goodwin, eds. New Thinking in Macroeconomics: Social, Institutional, and Environmental Perspectives, 213 - 229. Cheltenham UK and Northampton MA: Edward Elgar.
- Douma, Williy, Heleen van den Homberg, and Ange Wieberdink . 1994. "The Politics of Research on Gender, Environment and Development," in Wendy Harcourt, ed. *Feminist Perspectives on Sustainable Development*, pp. 176-186 NY, USA: Zed Book.
- Ferber, Stephen and Bradley, Dennis. 1995. "Ecological Economics." <u>http://www.fs.fed.us/eco/s21draft.htm</u> (retrieved July 15, 2005).

Forstater, Mathew. 2002. "Bones for Sale: 'Development', Environment and Food Security in East Africa." *Review of Political Economy*, 14 (1): 47-67.

Giddens, Anthony. 1979. Central Problems in Social Theory. Berkeley: University of California Press.

- _____. 1991. *Modernity and Self-Identity: Self and Society in the Late Modern Age*. Cambridge: Polity.
- Greene, Sheila. 2003. *The Psychological Development of Girls and Women Rethinking Change in Time*. London and New York: Routledge.

Hirst, Paul and Woolley, Penny. 1982. Social Relations and Human Attributes, London: Tavistock.

Hodgson, Geoffrey. 1999. Evolution and Institutions: On Evolutionary Economics and the Evolution of Economics. Cheltenham UK and Northampton MA: Edward Elgar.

. 2001. *How Economics Forgot History: The Problem of Historical Specificity in Social Science*. New York: Routledge.

- --- 2002. "Reconstitutive Downward Causation: Social Structure and the Development of Individual Agency," in Edward Fullbrook, ed. *Intersubjectivity in Economics: Agents and Structures*, pp. 159-180. London: Routledge.
- Kurian, Priya. 2000. *Engendering the Environment? Gender in the World Bank's Environmental Policies*. Aldershot UK: Ashgate.

Lawson, Tony. 2003. "Ontology and Feminist Theorizing." Feminist Economics 9 (1): 119-150.

_____. 1999. "Feminism, Realism and Universalism," *Feminist Economics* 5 (2): 25-59.

- McDonald, Hugh. 2004. *John Dewey and Environmental Philosophy*. New York: State University of New York Press.
- Mitchell, Wesley. 1937. The Backward Art of Spending Money and Other Essays. New York: McGraw-Hill.

- Nelson, Julie. 2003. "Confronting the Science/Value Split: Notes on Feminist Economics, Institutionalism, Pragmatism and Process Thought." *Cambridge Journal of Economics* 27: 49-64.
- Sharp, Ronda. 1999. "Women's Budgets" in Janice Peterson and Margaret Lewis, eds. *The Elgar Companion to Feminist Economics*, p. 764 769. Northampton, MA: Edward Elgar.

Shiva, Vandana. 1988. Staying Alive: Women, Ecology and Development. New Delhi: Kali for Women.

- Sturgeon, Noël. 2003. "Regional and Transnational Expressions of Ecofeminism and Responses to Globalization," in Heather Eaton, and Lois Ann Lorentzen, eds. *Ecofeminism and Globalization – Exploring Culture, Context and Religion*, p. 91 – 123. Lanham, MD.: Rowman & Littlefield Publishers.
- Taylor, Peter, and Frederick Buttel. 1992. "How Do We Know We Have Global Environmental Problems: Science and the Globalization of Environmental Discourse." *Geoforum* 23 (3): 405-416.
- Veblen, Thorstein. 1923. Absentee Ownership and Business Enterprise in Recent Times. New York: B.W. Huebsch.

______. 1969 [1919]. *The Place of Science in Modern Civilization and Other Essays*. New York: Capricorn.

_____. 1898. "Why is Economics Not an Evolutionary Science?" *Quarterly Journal of Economics*, 12 (4): 373-397.

- Weingart, Peter, Sandra Mitchell, Peter Richerson, and Maasen, Sabine, eds. 1997. Human By Nature: Between Biology and the Social Sciences. Mahwah NJ: Lawrence Erlbaum.
- Williams, William, D. 2004. "Veblen Effects," presented at Social Science Consortium, University of Missouri – Kansas City.
- Zein-Elabdin, Eiman. 1996. "Development, Gender and the Environment: Theoretical or Contextual Link" Journal of Economic Issues 30 (4): 929-946.

¹ For examples of the relationship between biodiversity and human health see: Eric Chivian and Aaron Bernstein (2004).

² For a comprehensive historical study on the extent of gender and environment-sensitiveness of World Bank policies see Priya Kurian (2000).

³ The particular references of Eiman Zein-Elabdin's critique are to the World Bank literature on forestry in Sub-Saharan Africa, representing the WID approach, and the work of Vandana Shiva representing the ecofeminist approach. Vandana Shiva (1988), an Indian physicist, characterizes development programs as a "Western, masculine project of modernization that has involved the subjugation of women and nature." She has promoted the discourse on women, development, and environment.

⁴ Noël Sturgeon (2003: 95) cautions about "fixing a definition of essentialist Ecofeminism." She argues: "... Ecofeminism in development discourse is not so much an immutable set of theoretical positions as it is a political intervention that continually shifts its discourse in relation to its negotiation with dominant forces in development politics."

⁵ Lawson (2003) has addressed feminists' concerns about universal theorizing, and has argued (2003: 123) about the possibility of "certain generalized features of widespread experience that are necessary for theorizing sets of conditions, and through which an ontological framework is achieved".

⁶ Lawson emphasizes his intention to encourage consideration of an ontological turn in feminist theorizing (2003: 128). The importance of an ontological conception is that "the theorist supposes at the outset that the world is intelligible, that what has happened, the actual, must have been possible, and that there are conditions which rendered the actual possible" (2003: 123). Lawson (2003: 128) further argues, "[B]y denying ontology, theorists cannot adequately put the question of the possibility of human emancipation." See Lawson (1999; 2003).

⁷ Anthony Giddens's Structuration approach (1979; 1991) to agency and structure proposed a way to avoid both methodological individualism and methodological collectivism, and stimulated a debate with Critical Realists. In her *Realist Social Theory* (1995), Margaret Archer conceptualizes human agency and social structure as two separate layers of social reality and suggests investigating the causal powers of both structure and agency. She critiques Structurationists, like Giddens, for defining structure and agency in terms of one another.

⁸ For further exposition of the relation between nature, experience, and the falsity of division between body and mind in the context of environmental philosophy see Hugh McDonald (2004).

⁹ For discussions of humans as social and biological beings see: Paul Hirst and Penny Woolley (1982); Peter Weingart, Sandra Mitchell, Peter Richerson, and Sabine Maasen (1997); also see Geoffrey Hodgson's discussion on habits and institutions (2001).

¹⁰ For a critical discussion about using biological metaphors in economics see Chapter 5 in Lawson's *Reorienting Economics* (2003). For a favorable discussion on the potential of modern biology for explanations process, time irreversibility, the importance of history, structural change, etc., see Hodgson (2001).

¹¹ Peter Tayler and Frederick Buttel (1992: 411) note "most environmental organizations have been disinclined to take on the world debt crisis, the net South-North capital drain, and the international monetary order as being fundamental contributors to environmental degradation."

¹² This question echoes Thorstein Veblen's (1923) distinction between workmanship and salesmanship or instrumental versus pecuniary valuation. In Veblen's work habits of thought originate from two general human propensities – "workmanship" ("group-regarding instinct") and "predation," ("self-regarding instinct").

¹³ For comparison of traditional principles of reciprocity and a monetized agricultural production, and their environmental aspects see Matthew Forstater (2002).

¹⁴ For discussion on money as an institution of debtor-creditor relations and property relations see Stephanie Bell and John Henry (2001).

¹⁵ Zein-Elabdin (1996: 941) points to the institutionally specific discussion of the role of the state in India that Bina Agarwal (1992) documents. Through land privatization, the state facilitated redefining land ownership in favor of well-off farmers who were predominantly male. Also see Bina Agrawal (2000).

¹⁶ For a review of "gender sensitive budgets" see Ronda Sharp (1999).