

The background features a large magnifying glass with a black rim, centered over a green circular area. The top of the cover is a bright yellow arc. Scattered around the magnifying glass are several smaller, colorful circles in shades of pink, blue, teal, red, and purple. The overall aesthetic is clean and modern, with a focus on vibrant colors and geometric shapes.

The Bronfenbrenner Primer

A Guide to Developmental Ecology

LAWRENCE G. SHELTON

ROUTLEDGE


THE BRONFENBRENNER PRIMER

This is the first ever introduction to Urie Bronfenbrenner's Ecological Systems Framework written specifically for undergraduate students. The author provides a carefully structured, guided introduction to Bronfenbrenner's concepts, their interpretation, and their potential applications. Bronfenbrenner's scientific analysis of the role the environment plays in human development earned him a premier place alongside Jean Piaget, Sigmund Freud, and Erik Erikson as a contributor to our understanding of developmental processes. His ideas are essential for analyzing how development happens, how it goes astray, how to right it when it does, and how to create environments that will promote healthy development.

The Bronfenbrenner Primer walks students through each component of the framework in a logical order, helping students build a solid, systematic understanding. It describes the background and context that led Bronfenbrenner to develop his framework, illustrates a wide array of potential applications, and provides activities students can do to practice applying the framework to their own experience. Honed over 25 years of teaching Bronfenbrenner's ideas, this text will be essential reading for students across the behavioral and social sciences.

Lawrence G. Shelton is a Developmental Psychologist who has taught in the Human Development and Family Studies Program at the University of Vermont since 1971. He has taught and applied Bronfenbrenner's ideas in novel ways for the past 25 years in a wide-ranging teaching and consulting career. Shelton has elaborated on and expanded Bronfenbrenner's ideas to emphasize the necessity of integrating ecological and developmental perspectives, an approach he refers to as Develecology.



Taylor & Francis

Taylor & Francis Group

<http://taylorandfrancis.com>

THE BRONFENBRENNER PRIMER

A Guide to Develceology

Lawrence G. Shelton

First published 2019
by Routledge
711 Third Avenue, New York, NY 10017

and by Routledge
2 Park Square, Milton Park, Abingdon, Oxon, OX14 4RN

Routledge is an imprint of the Taylor & Francis Group, an informa business

© 2019 Taylor & Francis

The right of Lawrence G. Shelton to be identified as author of this work has been asserted by him in accordance with sections 77 and 78 of the Copyright, Designs and Patents Act 1988.

All rights reserved. No part of this book may be reprinted or reproduced or utilized in any form or by any electronic, mechanical, or other means, now known or hereafter invented, including photocopying and recording, or in any information storage or retrieval system, without permission in writing from the publishers.

Trademark notice: Product or corporate names may be trademarks or registered trademarks, and are used only for identification and explanation without intent to infringe.

Library of Congress Cataloging-in-Publication Data

Names: Shelton, Lawrence G., author.

Title: The Bronfenbrenner primer : a guide to develecology / Lawrence G. Shelton.

Description: New York, NY : Routledge, 2018. | Includes bibliographical references and index.

Identifiers: LCCN 2018006571 | ISBN 9781138037151 (hbk : alk. paper) | ISBN 9781138037168 (pbk : alk. paper) | ISBN 9781315136066 (ebk)

Subjects: LCSH: Bronfenbrenner, Urie, 1917-2005. | Developmental psychology. | Environmental psychology. | Social ecology.

Classification: LCC BF713 .S5147 2018 | DDC 155—dc23

LC record available at <https://lcn.loc.gov/2018006571>

ISBN: 978-1-138-03715-1 (hbk)

ISBN: 978-1-138-03716-8 (pbk)

ISBN: 978-1-315-13606-6 (ebk)

Typeset in Bembo
by Wearset Ltd, Boldon, Tyne and Wear

**I respectfully dedicate this work to
Urie Bronfenbrenner (1917–2005)
Armin Grams (1924–2002)
and all of their generation on whose work we build**



Taylor & Francis

Taylor & Francis Group

<http://taylorandfrancis.com>

CONTENTS

<i>Preface</i>	<i>ix</i>
<i>Acknowledgments</i>	<i>xii</i>
1 Introduction to Urie Bronfenbrenner	1
2 From Ecology of Human Development to Devel ecology	6
3 The Framework	10
4 The Person and Development	13
5 Activities	20
6 Dyads and Relations	27
7 Important Characteristics of Relations	34
8 Roles	41
9 Settings	47
10 Ecological Transitions	51
11 Essentials of Systems Theory	55

viii Contents

12	Microsystem	58
13	Proximal Processes	63
14	Links and Relations between Settings	68
15	Mesosystem	71
16	Developmental Trajectory	84
17	Exosystem	91
18	Macrosystem	97
19	Chronosystem	103
20	Research Design	108
21	Bronfenbrenner's Examples	113
22	Using Bronfenbrenner's Framework	117
23	Exercises and Applications	126
24	Eco-Analysis	130
25	Develecology 001: Bronfenbrenner Made Plain	135
	Appendix I: Selected Works of Urie Bronfenbrenner Pertinent to Develecology	140
	Appendix II: Directory of Definitions, Propositions, and Hypotheses in Urie Bronfenbrenner, <i>The Ecology of Human Development</i> (Cambridge, MA: Harvard University Press, 1979)	143
	<i>Index</i>	148

PREFACE

A primer is a book presenting the basic elements of a subject, intended for beginning students. *The Bronfenbrenner Primer* is intended to help you understand one of the core topics in the study of human development—the framework of Urie Bronfenbrenner’s Ecological Systems Model of Development. I wrote this guide for my students at the University of Vermont. Now I am pleased to provide it to a wider audience. It is particularly gratifying for me to have it appear in 2018, the 101st anniversary of Urie Bronfenbrenner’s birth.

This book is not an attempt to present and explain Bronfenbrenner’s extensive body of work, or the development of his thinking across his career. It is neither a critique of his model nor a comparison of his thinking to other theories of development. I will not assess the current state of research using his framework. I intend only to provide an introductory guide to understanding the ecological framework for development proposed by Urie Bronfenbrenner, as published in his 1979 book, *The Ecology of Human Development*. In his book, Bronfenbrenner presented a scientific analysis of the role the environment plays in human development. That book and his subsequent writing on the topic earned Bronfenbrenner a premier place as a contributor to our understanding of human development. His work is cited in every developmental textbook, along with the views of Sigmund Freud, Erik Erikson, Jean Piaget, and others who shape our conceptions of development.

I teach to help students construct an understanding of how people develop. Why does development occur, and how? What influences the course of development? If you want to facilitate development, how can you do that? Over the course of my career, I have studied the works of Freud, Erikson, Sullivan, Piaget, and many other researchers and theorists who consider the processes of development. Each is useful to some degree for understanding some aspects of

development. While all of these and many other approaches assume that the **environment** is a significant determinant of the course or content of development, it is a challenge to find serious consideration of *how* context shapes development. What are the processes involved? What characteristics of the environment are important in development? How do we compare environments to understand how they lead to differences in development?

As a practitioner, an *applied developmental psychologist*, who tries to address barriers to development and to promote development, I need to understand not only how people develop, but how the environment shapes development. I need to know what changes in the environment will support development. I have to try to use both a *developmental perspective* and an *ecological perspective* to grasp how development has been shaped by the environment and what changes in the environment might shape development in desirable directions.

Bronfenbrenner provides a conceptual framework for understanding the environment half of the processes of development. His framework has been essential to my understanding and my work for many years. The classic and current theorists and researchers of development form one strong core of our understanding, but it was incomplete until Bronfenbrenner's work provided a way to conceptualize the environments in which development must occur. This second core is necessary to provide the *dual perspective needed* to analyze how development happens, how it goes astray, how to right it, and how to create environments that will promote healthy development. Fundamentally, development is the process of transacting with and adapting to the environment we experience as we change biologically.

Over the years, as I taught and practiced, the dual perspectives of development and ecology became so integrated in my thinking, that I eventually coined the term *develecolology* to refer to the study of the relationship between development and the ecosystem in which it occurs. Thus, this book also serves as an introduction to the study of develecolology.

While Bronfenbrenner's framework became essential to my thinking, and central to our curriculum in Human Development and Family Studies at the University of Vermont, I became convinced of its power as a tool for organizing our thinking about development and the contexts in which it occurs. I also grew more aware that the framework is not well explained in the developmental texts I used and reviewed, and that it is not as widely or deeply incorporated in training or in practice as I believe it should be.

Bronfenbrenner's framework is a challenge for beginning students, but they can grasp it and learn to apply it. They often find it so useful in later graduate study and in professional work that they are surprised so few people know it or use it. Learning Bronfenbrenner's scheme helps students cross the bridge from a focus on subjective experience to becoming critical thinkers who can learn and use formal theories of development. It allows them to think systemically about complex aspects of development, relationships, families, social institutions, and

policy. Those who understand it are able to conceptualize influences on development as well as approaches to changing ecosystems that hinder development so as to reduce problems (Shelton, 2012).

I developed this book through two decades of teaching Bronfenbrenner's framework to first- and second-year students at the University of Vermont. Those hundreds of students helped me understand Bronfenbrenner's scheme and learn to explain and apply it. My interpretations of Bronfenbrenner's scheme in this book are firmly rooted in Bronfenbrenner's own explanations of his thinking. The examples, explanations, and illustrations here evolved through my attempts to help students understand and apply the concepts consistently, and are mine. Any departures from Bronfenbrenner's meaning and intent are my responsibility. I hope I have explicated his ideas, and not misrepresented them. My students have found the explanations helpful, as I hope you will. I hope you also find the book, Bronfenbrenner's perspective, and develecology useful.

References

- Bronfenbrenner, U. (1979). *The Ecology of Human Development: Experiments by Nature and Design*. Cambridge, MA: Harvard University Press.
- Shelton, L. G. (2012, Summer). An introductory family science course built on Bronfenbrenner's ecological framework. *NCFR Report, Family Focus on Teaching Family Science*, 57.2, pp. 20–22.

ACKNOWLEDGMENTS

This book is for my students in Human Development and Family Studies and others like them who want to understand the ecological concepts put forth by Urie Bronfenbrenner and to apply them in analyzing social settings as contexts for human development. I am grateful to the late Professor Armin Grams who introduced me to Bronfenbrenner's ecology and led the way in helping our



FIGURE 0.1 Urie Bronfenbrenner

students learn to use it. I deeply appreciate the editorial contributions of my wife, Lauren Shelton, and Graduate Teaching Fellow *Extraordinaire*, Devon Voake.

I thank the many hundreds of students who have shaped my understanding of Bronfenbrenner's framework, develecology, and this book. Neither the students nor I would have learned nearly as much without the gentle and thoughtful assistance of Hillary Hazan Glass, Angela Albeck, Julie Leaf, Talia Glesner, Sarah Shackett, Devon Voake, and Simrat Peltier.

Writing the book was facilitated by a sabbatical leave provided by the University of Vermont.

The illustrations in this book were conceived by the author and executed by Ellen Voorheis.

Illustrations © Lawrence G. Shelton and used by permission.

Thanks to Harvard University Press for permission to reprint excerpts from *The Ecology of Human Development: Experiments by Nature and Design* by Urie Bronfenbrenner (Cambridge, MA: Harvard University Press), Copyright © 1979 by the President and Fellows of Harvard College.



Taylor & Francis

Taylor & Francis Group

<http://taylorandfrancis.com>

1

INTRODUCTION TO URIE BRONFENBRENNER

Who Was Urie Bronfenbrenner?

Urie Bronfenbrenner was a developmental psychologist. He earned a doctorate at the University of Michigan, and then taught for many years in the Department of Human Development at Cornell University. Bronfenbrenner wanted research on child development to be understood and to be useful. He especially wanted public policy to focus on supporting the development of children and families so that all children would have opportunity to grow up healthy and competent. He strongly advocated for Lyndon Johnson's "war" against poverty, and helped to design and implement the Head Start program for children from low-income families.

As Bronfenbrenner's career progressed, he became increasingly frustrated by the lack of child development research that could be used directly to understand how development was influenced by the neighborhood and community children lived in and how social policy affected the environments that shaped children's development. As he argued vigorously for research that considered the environment as well as the development that happened within it, he came to understand that one reason researchers didn't pay specific attention to the environment was that the developmental sciences didn't actually have a way of *conceptualizing* the environment. Although professionals in the field talked about the importance of the environment, and referred to the ecology of children and families, there was no common language or conceptual framework for identifying the elements of the ecosystem or how it affected development or relationships.

Researchers often measured or gathered data on characteristics of people, such as social class, family income, education, race, or ethnicity, measures we refer

2 Introduction to Urie Bronfenbrenner

to as demographic data. But these data don't really reflect the environments people live in, what people do, where they spend their time, or who the important people in their lives are. Demographic measures don't tell us how the environment treats people. Bronfenbrenner began to refer to the typical demographic variables as people's "social addresses," measures that tell us where people live in the social system. He wanted to see research that actually assessed what people experienced in the social system, what the characteristics of their specific environments were. From these, he hoped, we could learn how the environment acts in shaping development.

Bronfenbrenner came to ecology early. His understanding of the world was deeply affected in childhood, when, as he described in the Preface to his 1979 book, he had the good fortune to grow up on the grounds of a state institution for people with intellectual and psychiatric disabilities. There he roamed the fields and the woods with his father, a neuropathologist, trained in medicine. His father also had a Ph.D. in zoology, and Bronfenbrenner described him as a "field naturalist at heart" (1979, p. xi). He wrote: "Wherever we were he would alert my unobservant eyes to the workings of nature by pointing to the functional interdependence between living organisms and their surroundings" (1979, p. xii).

What Did Urie Bronfenbrenner Do?

Bronfenbrenner realized psychology did not have ecological concepts adequate for answering the kinds of questions he asked, questions that were necessary for understanding how society hindered development and how we might change it to support development. So he set out to create a way to conceptualize the human ecosystems in which development occurs. He set forth the framework in his 1979 book, *The Ecology of Human Development*. In the book, he outlined the concepts he distilled from decades of research and theory about what influences human development. He specified the concepts that were to be included (Definitions), offered a few assumptions that were important to make (Propositions), and presented a set of testable Hypotheses about how the ecosystem functions in shaping development. He created a scientific conceptualization, with as much specificity, objectivity, and clarity as possible. He encouraged researchers to test it, revise it, and expand on it, as these are the basic principles of any science. Bronfenbrenner continued to revise, test, and expand his understanding of development throughout his long career.

For his framework, Bronfenbrenner assumed a constructivist model of development, with the person an active participant in experience, and attempting to make sense of it. In the process of exploring and trying to adapt to the environment, the person constructs an understanding of the environment, and acquires skills to deal with it. Bronfenbrenner drew many ideas from Jean Piaget, particularly Piaget's book *The Construction of Reality in the Child* (1954).

In trying to capture the essence of the ecosystem, Bronfenbrenner began with the work of Kurt Lewin, who had tackled the task decades earlier. Acknowledging his debt to Lewin, Bronfenbrenner wrote:

the conception of the environment as a set of regions each contained within the next draws heavily on the theories of Kurt Lewin (1931, 1935, 1938). Indeed, this work may be viewed as an attempt to provide psychological and sociological substance to Lewin's brilliantly conceived topological territories.

(1979, p. 9; for more detail about Bronfenbrenner's understanding of Lewin, see Bronfenbrenner's 1977 article)

To these beginnings, Bronfenbrenner added concepts and connections drawn from a wide array of social science research to formulate his framework for putting development in context.

Why Is Bronfenbrenner's Work Important to Me?

As an undergraduate at Harvard, I majored in a field called "Social Relations." The title referred not to college party life, but to understanding human development and relationships within their social contexts. Social Relations was an interdisciplinary department incorporating developmental, social, and clinical psychologists, cultural anthropologists, sociologists, and psychiatrists. I studied Freud, Erikson, Piaget, Sullivan, Lewin, and Skinner, and was exposed to psychophysiology, psychopathology, psycholinguistics, anthropology, sociology, and more. My subsequent career and teaching have evolved from the integrative, multidisciplinary, and applied foundation that was laid down during those undergraduate years. I went on to study Child Psychology at the University of Minnesota. Studying child psychology research, I was often frustrated by two shortcomings in the professional literature. First, much of the research was not really developmental, because it studied age differences, not change over time. Cross-sectional studies can't really identify the processes or course of development in the way that longitudinal studies can. Second, research often ignored the context of the subjects in the studies, the environments that children were in. I was greatly pleased to hear Bronfenbrenner express his own similar dissatisfactions with the field.

When I began to study and then to teach Bronfenbrenner's framework, I found that it fit neatly onto the multidisciplinary foundation I began to develop in my major in Social Relations. His concepts provided me a language for describing professional as well as personal experiences I had had in a variety of programs and institutional settings. As a developmental psychologist myself, and a professor of Human Development and Family Studies, I was familiar with the problems in our fields he was responding to. Most importantly, his framework

filled a gap in my understanding of development, the gap he had identified as the lack of a conceptual language to describe how people and our environments interact in the processes of development.

As I worked to help students understand this conceptual language, I gradually discovered how powerful and essential Bronfenbrenner's concepts really are. Learning and being able to apply the framework can make a person's understanding of the ecosystem and of development significantly more valid, differentiated, and useful. Bronfenbrenner provides a general, and generalizable, framework that can guide both individual attempts to facilitate development and analysis of policy and proposed social interventions. Bronfenbrenner's approach *applies to all development*, optimal and less than optimal. It applies equally to children developing competence and adolescents becoming delinquents or addicts. Increasingly, I have found Bronfenbrenner's work consistent with the central features of the theories that have survived best.

Bronfenbrenner's views have become a major organizing scheme in my understanding of development and relationships. As I have evolved into an applied develecologist, his ideas have become essential in my teaching. As his ideas have become so important to my understanding of development, I have been increasingly puzzled by the relative inattention to Bronfenbrenner's perspective in the texts available for use in courses in human development. His ideas are usually mentioned, sometimes accurately, but they rarely are used to organize the material in texts.

I think one reason scant attention has been paid to Bronfenbrenner's work outside the research community is that his primary presentation of the framework, in his 1979 book *The Ecology of Human Development*, appeared now nearly four decades ago and was addressed to graduate students and researchers. The presentation of the perspective appearing there is tied to analyses of research studies that are now dated. As well, the terminology Bronfenbrenner uses is rich and precise, able to be understood and appreciated only with considerable study. So, while his views are recognized as important and provocative, and are mentioned in nearly every human development text, they are given cursory treatment, usually only in outline form. Typically, his views are presented as one of several viewpoints or approaches to understanding development, and then are not integrated with the material on development that follows. This treatment gives students the impression that Bronfenbrenner is as important and irrelevant as Freud and other outdated theorists mentioned in the introductory chapters, and thus worthy of being forever after ignored. This impression is misleading, of course, since the classic theories provide concepts that have gained wide acceptance in modern culture. The classic notions of old theories of development, behavior, and relationships form the historic underpinnings of the social sciences.

We cannot understand our current thinking if we can't place it in its intellectual context. In my view, Bronfenbrenner's ideas deserve close study and

understanding because they incorporate concepts essential to our useful interpretation of human development. There has been no introduction to his views, nothing published that makes his perspective accessible to students. This primer is my attempt to fill that gap, to present the human developmental ecological approach of Bronfenbrenner in an accessible manner, to put this powerful tool in the hands of students and others who would understand development.

References

- Bronfenbrenner, U. (1977). Lewinian space and ecological substance. *Journal of Social Issues*, 32, 513–531.
- Bronfenbrenner, U. (1979). *The Ecology of Human Development: Experiments by Nature and Design*. Cambridge, MA: Harvard University Press.
- Lewin, K. (1931). Environmental forces in child behavior and development. In C. Murchison (Ed.), *A Handbook of Child Psychology*. Worcester, MA: Clark University Press.
- Lewin, K. (1935). *A Dynamic Theory of Personality*. New York: McGraw-Hill.
- Lewin, K. (1938). *The Conceptual Representation and Measurement of Psychological Forces*. Durham, NC: Duke University Press.
- Piaget, J. (1954). *The Construction of Reality in the Child*. New York: Basic Books.

2

FROM ECOLOGY OF HUMAN DEVELOPMENT TO DEVELECOLOGY

What we call a field of study is important. The label helps us identify what is to be studied and how. It also may set boundaries, limiting the topic or the methods.

In his writing, Bronfenbrenner used the phrase “the ecology of human development” to refer to his work. The focus was to be human development, and he wanted to examine the environment, or context, in which development occurs. He defined the field this way:

The **ecology of human development** involves the scientific study of the progressive, mutual accommodation throughout the life course, between an active, growing human being and the changing properties of the immediate settings in which the developing person lives, as this process is affected by relations between these settings, and by the larger contexts in which the settings are embedded.

(DEFINITION 1, Bronfenbrenner, 1989, p. 188)

This definition draws attention to crucial aspects of Bronfenbrenner’s views, assumptions, and intentions. First, he intends to forward a **scientific**, research-based framework in which the assumptions about reality, the principles, and the definitions of concepts are as clear and concise as possible. In a scientific framework, testable hypotheses can be derived, and appropriate research strategies described. Second, he views humans as **active participants** in the process of development, engaged in continuing **adaptation** to an environment, an environment that includes relationships with other persons. Third, the environment is assumed to be changing, rather than static, and to be adapting to the developing person, so the **accommodations** made by the person and the

environment are **mutual and reciprocal**. Fourth, he conceives the environment as consisting of different **settings**, some of which the person participates in. Next, the process of mutual accommodation is affected by the relationships *between* settings, or parts of the environment. Finally, the process of mutual accommodation between person and settings is influenced by the larger context—community, society, and culture.

As Bronfenbrenner continued his work, his focus changed and his intent broadened. In his 1979 book, he hoped to convince researchers to put the environment into the study of human development, to pay attention to the context, and offered his framework to help them conceptualize the ecosystems in which development occurs. As his thinking progressed, he took on the broader task of explaining the complex role of the ecosystem in development, and began to describe his work as an “Ecological Systems Theory of Development.” As he moved more deeply into the processes of development, his attention turned to examining the role in development of biological change, and the difficult task of understanding the transactions of genetically driven changes with changes in the ecosystem. At this turn, he referred to his task as creating a “Bioecological Theory of Development,” which would recognize the equal partnership of nature and nurture, heredity and environment. As he expanded his work further to incorporate the importance of attending to the psychological and social processes involved in the development of the biologically changing person in a dynamic ecosystem, others were moved to use the “biopsychosocial-ecological model of development.” Bronfenbrenner headed off that proliferation of prefixes in his own work by referring to his understanding of development as a “Person-Process-Context Model.” This has the advantage of being easy to remember and encouraging attention to all three components. He later added “time” to his label to make it a “PPCT” model of development.

In this sequence of labels, we see Bronfenbrenner engaged in two tasks: defining a field—the ecology of human development—and naming the model of development he was constructing, as it went through a number of elaborations. At the heart of his work is the desire to meld ecology and development. In my view, he never quite succeeded in finding the right label for what he was trying to do. For his model, the term “bioecological” places biological aspects of development in a privileged position compared to psychological and interpersonal aspects, and thus fails to express the more encompassing integrative nature of our expanding understanding of human development. Are we to look only at biology and the ecosystem? The PPCT label for the model works well enough. For the field of study, “Ecology of Human Development” is useful, but suggests that human development might be studied without considering ecology. That is clearly not what Bronfenbrenner believed, and is not the reason he defined all the concepts within his framework in terms of the developing person’s engagement with the environment. The real power of his framework is that it *combines a developmental viewpoint with an ecological viewpoint*. Bronfenbrenner

8 Develecology

argues for the necessity of applying both perspectives at once, simultaneously, and integrating them into a systemic, comprehensive understanding. But the developmental and ecological viewpoints are usable separately. Development can be and often is considered out of context, or in a very limited context. In fact, that is precisely why Bronfenbrenner developed his conceptualization: to encourage us to think about *development in a context* that is an *ecosystem*. The concept of *ecology* incorporates notions of *systemic relationships*, in which the important elements are related to each other in ways that make changes in one element both productive of and responsive to changes in other elements. Just as development can be considered out of context, however, ecosystems can be analyzed non-developmentally. Ecosystems can be described statically, as if they don't change. How can we describe an approach that is both ecological and developmental, equally, at the same time?

Develecology

The power of Bronfenbrenner's framework lies in truly merging developmental and ecological views. The integration of the two perspectives results in a combined analytic power that far exceeds that of even the sum of the two. In my teaching, I began to use the phrases "ecological developmental framework" and "developmental ecology." Over time, the two sets of principles became so necessary to each other in my thinking that I coined the term *develecology* to refer to the integration of the two sets of principles.

"Develecology" refers to the study of the processes of development within an ecological framework, or the study of development in context. It brings into the general realm of scientific ecology a specialization devoted to the ecology of developmental processes. I believe it is a term usable in other fields as well. My focus, like Bronfenbrenner's, is on human develecology, but I can easily imagine someone else focusing on canine develecology or the develecology of Arctic mammals, for example. Because my interest is in how the study of develecology can be used to improve human conditions, I have come to call myself an "applied human develecologist."

Coined terms require definition, so, to define the term more precisely:

Develecology is the study of the processes of development of organisms and their changing relations with their environments, employing a combination of systemic and longitudinal perspectives that include the mutual and reciprocal transactions of organism and context. The focus of develecological analysis is transactional *change* in both the context and the organism over time.

Develecology fits within a broader framework of the familiar notions of **system**, **ecology**, and **ecosystem**. A *system* is any set of parts or components that work

together to make up a functioning whole. *Ecology* is the study of the relationships of living things with their environment and with each other. *Ecosystem* is a contraction of the phrase “ecological system,” meaning a system made up of a set of living organisms and their physical environment and the relations among them. From these notions branch concepts such as bioecology, human ecology, and, now, develecology.

Recent developments in conceptual formulations of development are consistent with Bronfenbrenner’s framework, and with the notion of develecology. Among these is the work of the late Esther Thelen, which she referred to as a “dynamic systems approach.” Thelen’s work on early motor development captures the essential integration of transactional effects of biological changes and actions within a dynamic ecosystem (Thelen & Smith, 1994).

The concept of “transaction” in systems thinking attempts to capture the principle that any action by one element of a system affects the other parts, and in turn, reciprocally, actions by any of the other parts will affect the original actor. In this case, when a person acts, or changes, effects will be experienced in other parts of the ecosystem, which will change the ecosystem, in turn affecting the person. A critical aspect of a transaction between any two elements of a system is that *both are changed* in the course of the transaction. Transactions are what happens between two components in a *living system* and are always bidirectional.

The central concerns of develecology are to explore what changes in a person and in the environment are important in shaping development. Develecologists hope to learn how the processes of adaptation and accommodation change as a person develops. As we proceed to explore Bronfenbrenner’s framework, I encourage you to practice keeping both perspectives, developmental and ecological, in mind at each step.

References

- Bronfenbrenner, U. (1989). Ecological systems theory. In R. Vasta (Ed.), *Annals of Child Development, Vol. 6, Six Theories of Child Development: Revised Formulations and Current Issues* (pp. 187–249). London: JAI Press.
- Thelen, E. & Smith, L. B. (1994). *A Dynamic Systems Approach to the Development of Cognition and Action*. Cambridge, MA: MIT Press.

3

THE FRAMEWORK

Person and Context: The Challenge of Complexity

Bronfenbrenner's scheme is a system of concepts: *the person* exists in a system of relationships, roles, activities, and settings, all interconnected. *Individual development* takes place as the developing person ages, constructs an understanding of his or her experience, and learns to act effectively within the system in which she or he is participating. Simultaneously, the development of the person *changes the system*. The system changes because as a person develops, his or her actions change, and other people in the system therefore respond differently to the developing person. At the same time, the *settings* the person participates in are interrelated with each other and with other settings. As well, the settings are part of the culture in which the whole system of settings and the roles, relationships, and activities within them are embedded. We will examine one by one the parts of the system, their interrelationships, and their impacts on development as we work to understand the processes of the whole.

The task we are undertaking is not a simple or easy one. It is a great challenge to understand the interrelatedness of a complex living system such as the social system we live in. It requires prodigious expansion of our mental structures to conceptualize relationships that constantly shift, and that act reciprocally on each other. The challenge is doubled because some aspects of relationships are part of the immediate experience of the person, while other aspects are more abstract, removed from the direct experience of the person. To then place the constantly changing, developing person within that dynamic system further enlarges the challenge.

Bronfenbrenner attempted to help us conceptualize the human ecosystem with an analogy to a set of nested Russian dolls, with the person in the middle

encased in a series of hollow dolls, representing levels of the system, each larger than the next (1979, p. 3). Another analogy sometimes offered is an onion, with a series of layers that can be peeled away. Both analogies are misleading.

In the set of dolls, each level is independent, though parallel—simply larger or smaller in scale. In develecology, the layers or levels are *not* simply bigger or smaller. Each is of a different *kind*. The *microsystem* is one level, but the next level, the *mesosystem*, is not merely a larger microsystem; it is the *relationship* among the settings of the smaller “nearer” level, or microsystems. The two levels are not just different in size, but otherwise identical. They are in fact different, the larger consisting of the *relationships* among the smaller, and thus *incorporating* the smaller, not existing independently of it, as the nesting dolls do. We will continue to elaborate our understanding of this complexity, but it will be necessary to overcome the implications of Bronfenbrenner’s own insufficient nesting doll and onion analogies. We will use Figure 3.1 to organize the framework, building it part by part as we proceed.

Bronfenbrenner presents his framework in the terms of science, stating his *definitions*, explaining his *assumptions or propositions*, and constructing formal, testable *hypotheses* about the way things work or are related in development in the environment. I’m going to present Bronfenbrenner’s hypotheses as if they are true, but remind you here and elsewhere that Bronfenbrenner was trying to encourage research, and to create a scientific approach to the study of development in context. A future challenge for you is to see what evidence you can

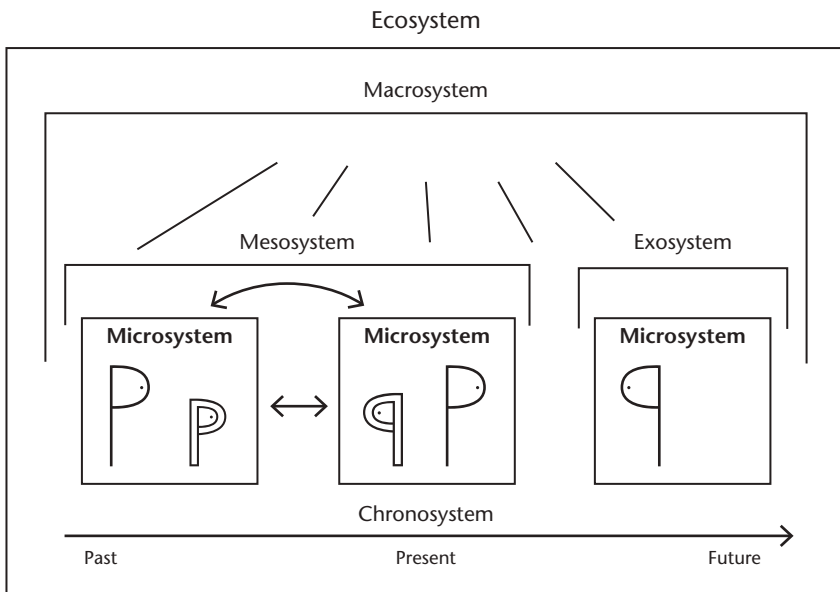


FIGURE 3.1 The structure of Bronfenbrenner’s Ecological Systems Model

find for the validity of his hypotheses. Are they supported by research? Are they evident in your own experience? Are they consistent with the conclusions of others who think about development? Bronfenbrenner hoped that we would test the validity of his hypotheses, refine them, and add to them as we construct a more sophisticated understanding of development in context.

The primary purpose of Bronfenbrenner's scheme is to lead us to understand the development of the person in the ecosystem in which the person participates. Bronfenbrenner couches his framework in scientific terms, and emphasizes the importance of designing ecologically sound research. Nevertheless, his life-long purpose was to design, promote, and evaluate policies and programs that would improve society and support development of children and families. Because many students of human development come to the topic motivated to help people, to teach, and/or in other ways to make the world a better place, I focus in this book on applying Bronfenbrenner's framework, and developecology more generally, to the task of facilitating development.

We attempt to facilitate development in many ways. We teach, we raise children, we counsel, we create social services, we give money to worthy causes, we pass laws and write policies, among others. The essence of facilitating development is to create environments, relationships, or activities that support and enhance the person's understanding of the world and ability to function in it. How do we know our efforts promote development and wellbeing of the people who are the targets of our efforts? Bronfenbrenner argues that to design effective strategies and to assess their effectiveness, we must understand the processes of **development in context**. In the following exposition, we will examine the context of development, and how variations in the person's experience in it shape development so that we might answer the question: How do we facilitate a person's development?

We will turn now to look at the person.

Reference

Bronfenbrenner, U. (1979). *The Ecology of Human Development: Experiments by Nature and Design*. Cambridge, MA: Harvard University Press.

4

THE PERSON AND DEVELOPMENT

Bronfenbrenner sees human beings as active participants in the world. In his view, we are always interacting with our environment, and these interactions are reciprocal: the world interacts with us. Analysis of the nature of the interactions or transactions we have with the systems in which we participate is key to explaining development. Understanding how we develop within the ecosystem is the central issue in Bronfenbrenner's work.

We are always learning about the world through *active experience* in it. The human mind is designed to make sense of experience. Intelligence is a characteristic of humans that enables us to construct understanding of our world, our experiences, and ourselves. As we develop we gain understanding, which we apply to our ongoing experience, gradually building up knowledge and understanding, and gradually refining our abilities to function effectively in our world. People are always engaged in the fundamental process of *adapting to the ecosystem* we are in. Intelligence can be considered the abilities to understand the experience we have and to use that understanding to adapt more effectively to the environment. The processes of development include biological changes in our ability to act in the world, cognitive changes in our ability to understand the world, and psychological changes in our ability to behave effectively in ways that are appropriate to the situations we encounter and the relationships we share with others.

Bronfenbrenner's view is fundamentally constructivist, similar to the approaches of Piaget, Montessori, Erikson, Vygotsky, and other theorists of human development. In all these theories, it is the person who is actively constructing an individual mind, based on the biological potentials humans have evolved over time. In constructivist theories, then, to understand a person's development is to explore the *gradual change in understanding* constructed by the person through experience in a world.

To Bronfenbrenner, it is important to keep in mind that the individual is constructing a unique and personal understanding, a conception that may be shared with many others, but which fundamentally is the individual's own. The person's view is based primarily on the specific and unique experiences the person has had over time in a specific and unique environment or ecosystem. If we want to understand the person and the person's unique development, we have to try to understand the particular ecosystem the person has experienced, over time. And that ecosystem must be examined from the person's own viewpoint, or perspective. Bronfenbrenner regularly returns to the notion that there is not an external objectively true or "real" environment in which the person is participating: there is only the environment the person perceives and interprets. What is developmentally important is the ecosystem as the person perceives and experiences it. So, to understand development we must attempt to *see the ecosystem from the perspective of the developing person in whom we are interested*.¹

What we are trying to explain, in Bronfenbrenner's view, is the essence of development, the understanding of the world the person is constructing, along with the skills the person is acquiring, skills that will enable the person to act effectively within the world. Bronfenbrenner's emphasis on understanding and skills developed in transaction with a specific environment is incorporated in his definition of development:

Human development is the process through which the growing person acquires a more extended, differentiated, and valid conception of the ecological environment, and becomes motivated and able to engage in activities that reveal the properties of, sustain, or restructure that environment at levels of similar or greater complexity in form and content.

(DEFINITION 7, Bronfenbrenner, 1979, p. 27)

Let's break up this definition into its component parts. Figure 4.1 represents the developing person.

The Growing Person

The developing person changes over time. Changes are inherent in human growth. The person changes biologically, and the biological changes themselves are in part shaped by the nature of the person's participation in the ecosystem. Examples of transactions in which the *ecosystem alters biological change* would include these, among many others:

- 1 If the ecosystem does not afford food adequate for good nutrition, the person's biological growth reflects the inadequate nutrition.

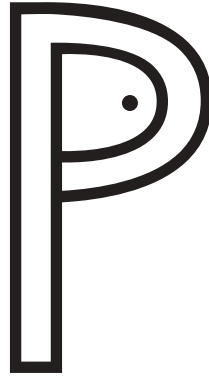


FIGURE 4.1 The developing person

- 2 If the ecosystem encourages practice of particular motor skills, the person will develop better motor skills than would be the case if the person participated in an environment without such opportunities.

Similarly, the biological changes taking place change the nature of the person's participation in the ecosystem. Examples of transactions in this direction of the transaction include:

- 1 Learning to walk makes it possible for the child to explore the ecosystem more broadly and to reach places that were unavailable to the infant.
- 2 Puberty typically makes the person a potential sexual partner in the eyes of other members of the ecosystem. So, the transactions the person has with those other people will change because their view or understanding of the developing person changes, and the other people will behave differently. They will gradually assign a new role to the developing person, not necessarily on the basis of the developing person's new *behavior*, but because of *their perception* of the person's biological changes.
- 3 Pregnancy changes one's role in the ecosystem but also may change one's ability to move quickly or to carry out tasks as one has previously.
- 4 Slowing of reflexes or perceptual changes in the later years may alter how one can participate in the ecosystem.

Thus, the biological characteristics of the person, characteristics that change regularly through the life span, help *determine* the person's participation in the ecosystem, and in turn, those biological changes *are influenced by* the nature of the ecosystem and of a person's participation in it.

Biological characteristics are significant in the experience of the person in the ecosystem in other ways as well. *People differ* biologically. That is one of the

wonderful features of humanity. We differ by sex, skin color, facial characteristics, body type, distribution of hair and its characteristics, shape of our faces, feet, hands, and so on and so on. Our brains also differ. We have genetically based differences in our propensity to develop a variety of skills. We have different temperaments, different physiological responses to a variety of stimuli, and different characteristic emotional tones and reactions to experience and events.

Each of us is a unique variation on the human paradigm. Our experience of the environment reflects the influence of many of these characteristics. Some of us may be attracted to a setting that exposes us to music and provides opportunities for musical exploration, while others of us might find such a setting less interesting. Some may enjoy physical challenge, and seek out opportunities to run, climb, ride, or jump.

At the same time, the subtle and not-so-subtle differences among us often have *meaning to others* in the ecosystem. Differences from others in the setting may have meaning in a setting, and thus shape the transactions we have in it and the nature of our participation and experience in the system. For example, if a person's sex is a basis for exclusion from some activities in a setting, then being male or female will determine one's participation and experience in the setting, as it does in all cultures. In a setting in which some skin colors are valued above others or where dark skin makes one subject to exclusion or differential treatment, then the biology of skin color will shape experience. Less dramatically, perhaps, in a family of quiet, reflective people, a child with a high energy level and desire for physical activity may have different experience and develop a different view of self and of others than the same child would in a family of high-energy active athletes.

Thus, biologically based variations affect our participation in our ecosystems in several ways. Our biology may lead different people to engage in different activities, different roles, or different sorts of relations in a particular setting. In the longer view, development is shaped by the accumulated effects of those variations in experience and variations in the ecosystem itself, as some settings may be open or closed to our participation.

The variety of transactions between biology and experience/environment are summarized in Figure 4.2.

Conception of the Ecological Environment (View of the World)

Knowledge and understanding are the result of the perceptual, cognitive, and psychological processes humans employ. Psychological processes underlie participation in the world. People perceive, remember, process information, distort, think, practice skills, seek experience, explore, try things out, etc. In most developmental theories, these psychological processes of engagement in the world are essential mechanisms of change and development. We call these processes "*proximal*," because they are directly in the experience of the person.

Growing Person in the Ecosystem

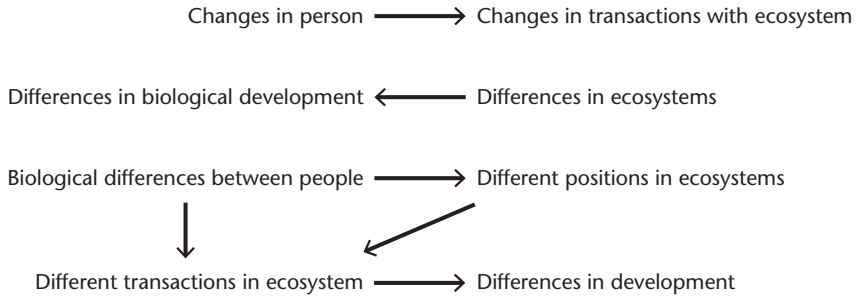


FIGURE 4.2 Transactions between biology and environment

Bronfenbrenner assumes all these psychological processes are ongoing, thus change along with biological development, and that they are affected by experience in the ecosystem, by participation in the ecosystem. Describing or explaining developmental changes in essential psychological processes is not a focus in his framework, but understanding them is necessary for analyzing changes in participation in the world. So, students of development must still study and comprehend the many theories and domains of development that focus on those processes.

As the biologically changing person experiences the ecosystem in increasingly sophisticated ways, there are more experiences, and more to understand. The understanding constructed covers more of the ecosystem, becoming more extended, and has more details, becoming increasingly differentiated, or having more parts.

To Bronfenbrenner, what is important about the knowledge and understanding constructed by the person is whether they are complex and valid—valid in the context of the specific experiences the person has had. Does the knowledge we construct help us understand the experience we have? Are we seeing our surroundings clearly, and understanding how our world functions? Are we able to anticipate or predict what will happen? Can we adapt or cope with changes more effectively? As we develop more valid understanding, we also may become more able, or skilled, at exploring and changing the world, able to participate in our environment more effectively, safely, and comfortably. In Bronfenbrenner's view and in his definition of development, it is the practical understanding and skills we develop that are most important. The development he describes is always in part an adaptation to the ecosystem the person is in.

When Bronfenbrenner refers to an ecosystem, or some component of an ecosystem, as “facilitating development” or “enhancing development,” he is referring to promoting human development as defined in his Definition 7. Development is facilitated either when the person's view of the world becomes more valid, extended, and/or differentiated, or when the person becomes more motivated and able to act in ways that are more effective in managing or living

in the environment. It is important to keep his definition of development constantly in mind as we learn to use the develecological framework.

We are used to saying that people *learn from experience*. Experience comes from or is the result of transactions we have with people and with settings—the ecosystem. People employ their mental processes to make sense out of their transactions and the ecosystem in which they occur. Making sense of our experience produces a view or conceptual understanding of the experience, the ecosystem, and ourselves. As we develop, our view of the ecosystem becomes *more extended*—it covers or includes more experiences and more of the ecosystem. Our view becomes *more differentiated*—we see the ecosystem in more detail, with more parts, and more differences among the parts. Our understanding also becomes *more valid*—our understanding becomes more consistent with the ecosystem we exist in, and therefore more useful to us in the process of adapting to the ecosystem we experience.

Development also consists, in Bronfenbrenner's definition, of becoming *more motivated* and *more able* to investigate, explore, manipulate, take care of, and change the ecosystem we experience. His definition of development thus takes into account that people are curious and that our skills and potentials change as we grow. Our brains and our mental processes mature and respond to the experience we have, making it possible for our understanding to become more complex. Our bodies change to permit greater mobility, more dexterity, and more strength to use in exploring and maintaining the environment we are in. So we become more skilled, more able. And why would we become *more motivated* to engage in activities like those he includes in his definition? Curiosity is a type of motivation. Perhaps humans want to understand and be comfortable in their environments, so the activities that fit the definition represent our ways of *adapting to* the ecosystem and *adapting it* so we understand and fit in it better. Perhaps we want to be competent, and being able to do something motivates us to do more, and thus become more competent.

Notice, too, what Bronfenbrenner's definition of development *does not include*. It is not about IQ, test scores, grades, or vocabulary, or speed of processing, or memory capacity. It is specifically about our understanding of our ecosystem and our competence in transacting with the environment. Thus, Bronfenbrenner's definition of development is about our adaptation to the ecosystem that is shaping our development in it. Defining development in this way, Bronfenbrenner works to make his framework as internally consistent as possible. An ecological view of development is about developing in, understanding, adapting to, and functioning within the ecosystem.

Finally, in Bronfenbrenner's scheme, the developing person can be any person at *any point in the life span*. As long as the person is adapting to the ecosystem, working to develop a more valid understanding and improved skills, the person is developing. In many of the definitions and hypotheses that follow, Bronfenbrenner uses the phrase "developing person" to refer to the person whose development we are focusing on, the object of our attention.

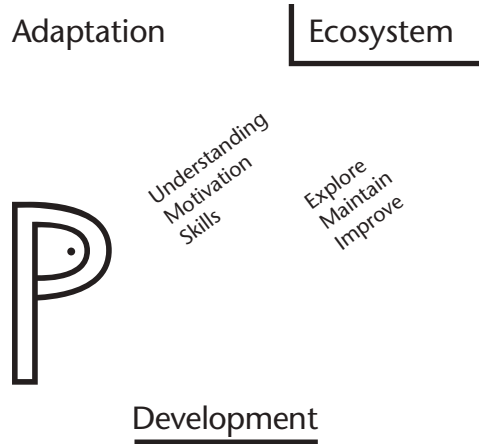


FIGURE 4.3 Components of development

Remember: In Bronfenbrenner's view of development: Development happens within a person who is assumed to be growing and changing biologically. Development is the result of transactions with the ecosystem. Development is changing the person's transactions with the ecosystem, and the ecosystem is also changing. Development consists of three elements:

- 1 The person's understanding of the ecosystem becomes increasingly differentiated, extended, and valid.
- 2 The person becomes *more skilled and thus able* to explore, maintain, and transform the ecosystem.
- 3 The person becomes *more motivated* to explore, maintain, and transform the ecosystem. As the person develops, his or her ability to adapt to and function in the ecosystem improves.

Figure 4.3 summarizes Bronfenbrenner's concept of development as adaptation to an ecosystem.

Now let's move on to consider what people *do* in the ecosystem.

Note

- 1 For discussion of this phenomenological view and its importance in Bronfenbrenner's Definitions, see Bronfenbrenner, 1979, pp. 22–34.

Reference

Bronfenbrenner, U. (1979). *The Ecology of Human Development: Experiments by Nature and Design*. Cambridge, MA: Harvard University Press.