Preface

While many aspects of sexuality (such as sexual orientation) are biologically determined, most sexual behaviors are the result of a decision. The title of this book, *Human Sexuality: Making Informed Decisions,* establishes the book's theme—to encourage and take charge of your life view by making deliberate, informed sexual decisions. Young adults might recognize that by not actively making a decision, they have already made one by default. In this regard, making informed and deliberate decisions involves being aware of the options and consequences of the various choices and taking deliberate action.

Dr. Susan Milstein, a scholar in human sexuality, joins Dr. David Knox (coauthor) for this new edition. Dr. Milstein's contributions are evident throughout the text, especially in the vignettes on *Technology and Sexuality.* This topic is one of her specialties and is one of the courses she teaches at The George Washington University.

The fifth edition of *Human Sexuality: Making Informed Decisions* builds on the features and strengths of previous editions, with new content on women's issues and a new chapter on pregnancy and childbirth. The chapters have been thoroughly revised, with more than 400 new research citations (many 2016 references). They also feature original data on 9,949 undergraduates who reveal their sexual attitudes and behavior. Some of the specific enhancements are as follows:

New to this Edition

Chapter 1: Human Sexuality: An Introduction

Open Letter to College-Bound Kids About Sex
Self-Assessment: Sexual Importance Scale
Female Hedonism
Technology and Sexuality: There's an App for That!
Demographics of Sexual Sensation Seekers
Four Themes of Sexual Decision Making by Women

Chapter 2: Sex Research and Theory

Research on Sexual Scripting from Interviews with 95 Women
Feminist Theory of Sexuality
Early Sex Researchers
Up Close: Masters and Johnson
Technology and Sexuality: Online Surveys

Chapter 3: Female Sexual Anatomy, Physiology, and Response

Role and Function of the Crura
Human Rights Crisis: Female Genital Cutting
Menstrual Extraction
Personal Decisions: Shaving Pubic Hair
Technology and Sexuality: Cosmetic Surgery
Percent of Women and Men Pretending to Have an Orgasm

Chapter 4: Male Sexual Anatomy, Physiology, and Response

Male Satisfaction with Penis Size
Female Preference for Penis Size
Continued Controversy on Routine Male Circumcision
Technology and Sexuality: Promises to Increase Penis Length

Chapter 5: Gender and Sexuality

Sexist Objectification in Girls' Clothing
The Genderbread Person Diagram
Sexual Assertiveness Questionnaire
Gender Roles Depicted in the Media
The Mosaic Brain
Technology and Sexuality: Transgender Options

Chapter 6: Love and Sexuality

Love as Top Reason for Engaging in Partnered Sex
Motivations for Hooking Up
Transitioning from Hooking Up to a Romantic Relationship
Friends with Benefits
Couples and Polyamory
Technology and Sexuality: Technology and Romantic Relationships

Chapter 7: Communication and Sexuality

Social Policy: The Law and Sexting
Texting and Interpersonal Communication
When Social Network Becomes a Relationship Problem
Lack of Assertiveness of Females Requesting Cunnilingus
Technology and Sexuality: Sexting

Chapter 8: Individual and Interpersonal Sexuality

Asexuality
Cultural Attitudes on Masturbation
Vibrators
Technology and Sexuality: Sex Toy History and Impact on Relationships
Risks of Anal Sex
Threesomes
Orgasmic Meditation

Chapter 9: Lifespan View of Sexuality

Technology and Sexuality: Effect of Reality TV on Viewers
Contrast of Sex Education by Parents in the Netherlands and in the United States
Influences on Sex Education in Public Schools
Teen Birth Rates in the United States

Chapter 9: Lifespan View of Sexuality *(Continued)*

Social Policy: Plan B for Adolescents?
Developmental Stages of Women from 20s through 60s
Sexuality Among the Divorced
Definitions of Infidelity
Characteristics of Potential Infidelity
Working through Mutual Infidelity

Chapter 10: Diversity—LGBTQIA

Technology and Sexuality: Online LGBTQIA Support Groups
Apps for Individuals Exploring Their Sexuality
The Dangers of and Legislation Against Conversion Therapy
Difference between Concealment and Nondisclosure
What To Do about LGBT Prejudice and Discrimination
Coming Out as a Bisexual

Chapter 11: Health and Sexuality

Technology and Sexuality: Online Self-Diagnosis and Treatment
Effects of Illness on Sexuality and Well-Being
Effect of Dementia on Sexual Activity
Effect of Hysterectomy on Libido
Post-Mastectomy Options: Going Flat

Chapter 12: Contraception and Abortion

Technology and Sexuality: Contraception
Male Acceptance of the Female Condom
Pat Maginnis and the Army of Three
Impact of Abortion Restrictions in the United States
Increased Use of LARCs (Long Acting Reversible Contraceptives)
Women on Waves

Chapter 13: Pregnancy and Childbirth

Causes of Infertility
Personal Decisions: I Am an Egg Donor
Medication Use in Pregnancy
Childbirth Preparation: Lamaze
Stages of Labor
Pain Control in Labor and Delivery
Technology and Sexuality: Infertility, Birth Defects, Information Sharing
Cesarean Childbirth
Trends: Classes, Birth Centers, Home Birth, and VBAC
Postpartum Depression and Treatment

Chapter 14: Sexual Dysfunctions and Sex Therapy

Technology and Sexuality: The Medicalization of Sexual Dysfunctions
Social Policy: "Even the Score" Debate
Helping Women to Achieve Orgasm
Ogden's *Expanding the Practice of Sex Therapy*
Effect of Stress on Sexual Interest, Arousal, and Satisfaction
Effect of Premature Ejaculation on Women's Sexual Satisfaction
Sexual Problems and Sexual Orientation
Painful Intercourse in Postmenopausal Women

Chapter 15: Variant Sexual Behavior

Technology and Sexuality: Finding Paraphilia Partners via the Internet
Personal Decisions: Whose Business Is a Paraphilia?
Risks of Voyeurism and Objectification of Women
Prevalence of Pedophilia
Cultural Factors: Sexualizing Girls and the Mainstreaming of Pedophilia
Medical View of Sexual Addiction

Chapter 16: Sexually Transmitted Infections

Technology and Sexuality: Notification of Partners
Percentage of Sexually Active Individuals Who Have an STI
Primary Reason Individuals Reveal That They Have a STI
Script for Disclosing an STI
How Treatment for HIV can Be Prevention
Emerging Infectious Disease: Zika Virus and Sexual Transmission

Chapter 17: Sexual Coercion

Technology and Sexuality: Resources for Safety, Information, and Support
Types of Sexual Harassment
Tactics that Pressure a Person to Have Sex
My Defining Moment (Personal Rape Experience)
Rape Culture
Men as Victims of Rape
Title IX and Reporting Rape
Reactions to Being Forced to Have Sex
Secondary Victimization
Social Policy: Rape Culture: A First Lady Speaks Out
Men's Anti-Rape Resources

Chapter 18: Commercialization of Sex

Technology and Sexuality: Online Porn, Commercial vs. Amateur, and "Pornification"
Personal Experience: Camming by a College Student

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Finally, we are always interested in ways to improve the text. As such, we invite your feedback and suggestions for material to include in subsequent editions. We welcome dialogue with professors and students about sexuality issues, and we encourage you to email us.

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Supplements and Resources

Instructors Supplements

A complete teaching package is available for instructors who adopt this book. This package includes an online lab, instructor's manual, test bank, course management software, and PowerPoint™ slides.

BVT*Lab*	An online lab is available for this textbook at www.BVTLab.com, as described in the BVT*Lab* section below.
Instructor's Manual	The instructor's manual helps first-time instructors develop the course, while offering seasoned instructors a new perspective on the material. Each section of the instructor's manual coincides with a chapter in the textbook. The user-friendly format begins by providing learning objectives and detailed outlines for each chapter. The manual then presents lecture discussions, class activities, and sample answers to the end-of-chapter review questions. Lastly, additional resources—books, articles, websites—are listed to help instructors review the materials covered in each chapter.
Test Bank	An extensive test bank is available to instructors in both hard copy and electronic form. Each chapter has approximately 50 multiple choice, 25 true/false, 10 short answer, and 5 essay questions ranked by difficulty and style. Each question is referenced to the appropriate section of the text to make test creation quick and easy.
Course Management Software	BVT's course management software, Respondus, allows for the creation of tests and quizzes that can be downloaded directly into a wide variety of course management environments, such as Blackboard®, WebCT™, Desire2Learn®, Canvas™, and others.
PowerPoint Slides	A set of PowerPoint slides for each chapter, comprising a chapter overview, learning objectives, slides covering all key topics, key figures and charts, and summary and conclusion slides.

Student Resources

Student resources are available for this textbook at www.BVTLab.com. These resources are geared toward students needing additional assistance, as well as those seeking complete mastery of the content. The following resources are available:

Practice Questions	Students can work through hundreds of practice questions online. Questions are multiple choice or true/false in format and are graded instantly for immediate feedback.
Flashcards	BVT*Lab* includes sets of flashcards that reinforce the key terms and concepts from each chapter.
Chapter Summaries	Convenient and concise chapter summaries are available as a study aid.
PowerPoint Slides	All instructor PowerPoints are available for convenient lecture preparation and for students to view online for a study recap.

BVT*LAB*

BVT*Lab* is an affordable online lab for instructors and their students. It includes an online classroom with a grade book and chat room, a homework grading system, extensive test banks for quizzes and exams, and a host of student study resources. Even if a class is not taught in the lab, students can still use the resources described below.

Course Setup	BVT*Lab* has an easy-to-use, intuitive interface that allows instructors to quickly set up their courses and grade books and to replicate them from section to section and semester to semester.
Grade Book	Using an assigned passcode, students register for the grade book, which automatically grades and records all homework, quizzes, and tests.
Chat Room	Instructors can post discussion threads to a class forum and then monitor and moderate student replies.
Student Resources	All student resources for this textbook are available in digital form at BVT*Lab*.
eBook	Students who have purchased a product that includes an eBook can download the eBook from a link in the lab. A web-based eBook is also available within the lab for easy reference during online classes, homework, and study sessions.

CUSTOMIZATION

BVT's Custom Publishing Division can help you modify this book's content to satisfy your specific instructional needs. The following are examples of customization:

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- Deletion of chapters not covered in your course
- Addition of paragraphs, sections, or chapters you or your colleagues have written for this course
- Editing of the existing content, down to the word level
- Customization of the accompanying student resources and online lab
- Addition of handouts, lecture notes, syllabus, and so on
- Incorporation of student worksheets into the textbook

All of these customizations will be professionally typeset to produce a seamless textbook of the highest quality, with an updated table of contents and index to reflect the customized content.

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CHAPTER 2

Sex Research and Theory

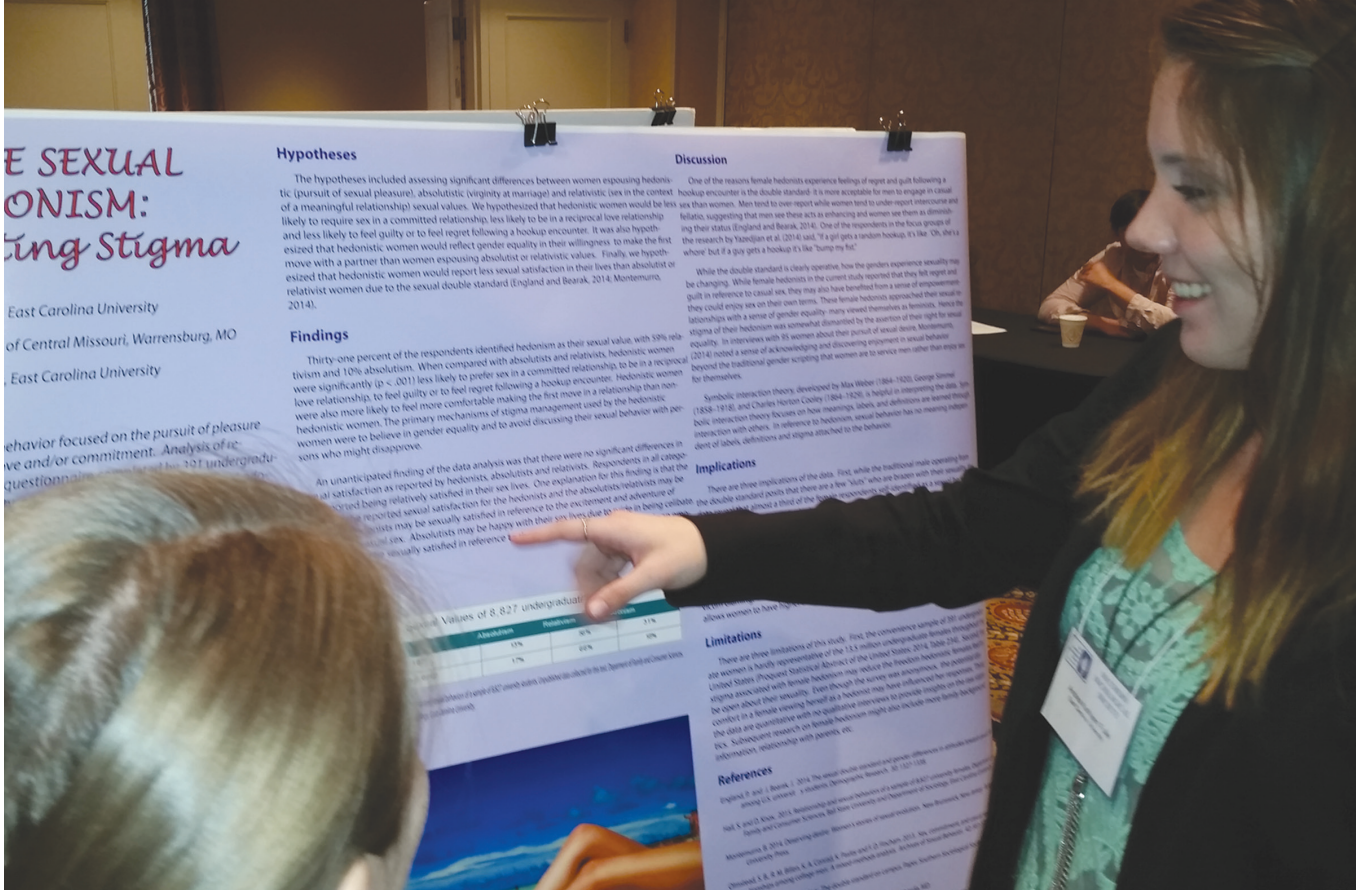
Google is not a synonym for "research."

Dan Brown, author, *The Lost Symbol*

Chapter Outline

OBJECTIVES

1. Know how scientific knowledge is different from other sources of knowledge
2. Identify and distinguish between deductive and inductive research
3. Review the various biological, psychological, and sociological theories used to study sexuality
4. Review the contributions of early sex researchers
5. Summarize the problems associated with Masters and Johnson's research
6. Explain the five methods of data collection and the pros and cons of each
7. Discuss the three levels of data analysis



Source: David Knox

Truth *or* Fiction?

T / F 1. The focus of sex research has been on the negative aspects of sexuality.

T / F 2. About a quarter of hookups transition to romantic relationships.

T / F 3. Internet respondents who have valid email addresses are different from those who do not.

T / F 4. Dr. William Masters falsified his data on reparative data.

T / F 5. The new frontier of sex research is genetic studies as related to environmental factors.

Answers:
1. T 2. T 3. F 4. T 5. T

Students taking courses in human sexuality are often kidded about being in such classes. Peers may tease and ask questions like, "Does the class have a lab?" Biologists, psychologists, sociologists, health-care professionals, and others who study human sexuality in their occupational fields may also be subjected to ridicule or sarcasm. One sexuality teacher reported, "I have been at times reluctant to see myself as a 'sexualities scholar' because many of my colleagues leap to conclusions about my sexual identity, and they treat me differently" (Irvine, 2015, p. 120).

Nevertheless, the study of human sexuality is a serious endeavor. Professional organizations such as the Society for the Scientific Study of Sexuality, academic programs such as the Kinsey Institute for Sex Research, and upward of 20 journals testify to the validity of the study of sexuality.

BVT Lab

Flashcards are available for this chapter at www.BVTLab.com.

Critical sexuality studies reflect the commitment of academia to the scientific study of sexuality. Critical sexuality studies identify core sexuality areas of research. These include (1) HIV and AIDS, (2) gender, (3) sexology, (4) sexual and reproductive health (as distinct from HIV and AIDS), and (5) human rights. Although Widener University, in Pennsylvania, currently offers the only fully accredited doctoral program in human sexuality studies in the United States, various levels of training in sexology are available in other universities as part of other programs, such as psychology or gender studies.

Due to the influence of conservative ideology and religious authority focusing on the dangers of sexuality and the need for social control and chastity in the United States, the majority of sex research has dealt with the negative aspects of sexuality (Arakawa et al., 2013). In a content analysis of articles appearing in four prestigious journals (*Journal of Sex Research, Archives of Sexual Behavior, The New England Journal of Medicine,* and *Obstetrics and Gynecology*) from 1960 to the present, the researchers revealed that "only a slim minority of articles investigated the delights of love, sex, and intimacy." Indeed, "the vast majority focused on the problems associated with sexual behavior." Much content has also focused on the disease aspects of sexuality,—specifically, HIV and other STIs.

Pleasure adds meaning to our lives. Sexual pleasure is particularly powerful in making one feel alive. It can add a sense of connectedness to the world or to each other.

Mitchell Tepper, founder, Center of Excellence for Sexual Health

Finally, there is a need to move beyond print journals in academia to the dissemination of sex research content to lay audiences via the use of social media—blogs, podcasts, YouTube, Twitter®, etc.—as well as articles in popular magazines and sexuality workshops in local communities (Lehmiller & Vrangalova, 2014).

2.1 The Nature of Sex Research

Scientific research involves collecting and analyzing **empirical evidence**—data that can be observed, measured, and quantified. There are various sources of knowledge: common sense (living together before marriage means that people get to know each other better and results in happier marriages), intuition (it just feels like cohabitants would have happier marriages), tradition (Icelanders have always lived together before marriage), and authority (religious leaders disapprove of cohabitation). Scientific knowledge is different from all of these in that it is based on observable or empirical evidence. For example, in contrast to the assumption that hooking up is associated with no subsequent romantic relationship, Erichsen and Dignam (2016) found that almost a quarter (23%) of their hookup respondents reported that they had transitioned to a long-term romantic relationship.

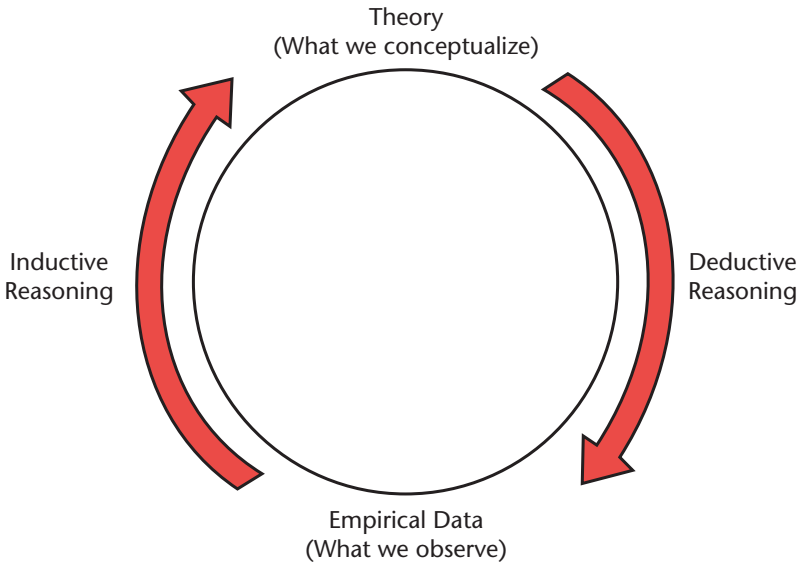
Critical sexuality studies
Generic term for current core content of sexuality theory and research that is multifaceted and multidisciplinary (crossing several social science and humanities disciplines)

Empirical evidence
Data that can be observed, measured, and quantified

Researchers are expected to not only connect theory to their data (see Figure 2-1) but also publish their findings. Other researchers and academicians can then replicate, scrutinize, and critically examine these findings.

Thus, theory and research are both parts of the scientific process. Theory and empirical research are linked through two forms of reasoning: deductive and inductive.

FIGURE 2-1 **Links Between Theory and Research: Deductive and Inductive Reasoning**



Deductive research involves starting with a specific theory, generating a specific expectation or hypothesis based on that theory, and then gathering data that will either support or refute the theory. For example, researchers may hypothesize that men might move a new acquaintance faster toward sex than women would do in the same situation; thus, the researchers may ask university students to complete a questionnaire on hooking-up scripts and pacing sexual behavior.

Alternatively, researchers might engage in **inductive research**, which begins with specific data that are then used to formulate (induce) an explanation (or theory). In this case, researchers might have a data set that shows that men are more aggressive sexually and might hypothesize that such aggressiveness is biologically and socially induced.

True science teaches, above all, to doubt and be ignorant.
Miguel de Unamuno, Spanish novelist

In this chapter, after summarizing basic theories of sexuality, we describe how researchers conduct scientific studies of sexuality. First, however, we review the interdisciplinary nature of the study of sexology.

Deductive research
Sequence of research starting with a specific theory, generating a specific expectation or hypothesis based on that theory, and then gathering data that will either support or refute the theory

Inductive research
Sequence of research that begins with specific empirical data, which are then used to formulate a theory to explain the data

Personal REFLECTION

Take a moment to express your thoughts about the following question.

How much of your knowledge about human sexuality is based on each of the various sources of knowledge: common sense, intuition, tradition, authority, and scientific research?

2.2 The Interdisciplinary Nature of Sexology

Sex researchers represent a broad range of disciplines. The study of sexuality is an interdisciplinary field, including psychology, sociology, family studies, medicine, public health, social work, counseling and therapy, history, and education. While courses in human sexuality are most often taught in departments of psychology, health, sociology, and family studies, the three major sources of content are biosexology, psychosexology, and sociosexology.

Sociosexology acknowledges the cultural and social forces that influence sexual beliefs, attitudes, and behaviors. The American flag symbolizes the social institutions, social policies, and cultural and social beliefs operative in the United States.
Source: Maria McDonald

Biosexology is the study of the biological aspects of sexuality. Studies in this field focus on such topics as the physiological and endocrinological aspects of sexual development and sexual response, the biological processes involved in sexually transmitted infections, the role of evolution and genetics in sexual development, the physiology of reproduction, and the development of new contraceptives. Biosexology is also concerned with the effects of drugs, medications, disease, and exercise on sexuality.

Psychosexology involves the study of how psychological processes influence and are influenced by sexual development and behavior. For example, how do emotions and motivations affect sexual performance, the use of contraception, and safer sex practices? What psychological processes are involved in the development of sexual aggression and other forms of sexual deviance? How do various sexual and reproductive experiences (such as pregnancy, rape, infertility, sexual dysfunction, and acquisition of a sexually transmitted infection) affect an individual's emotional state?

Sociosexology is concerned with the way social and cultural forces influence and are influenced by sexual attitudes, beliefs, and behaviors—for example, how culture, age, race, ethnicity, socioeconomic status, and gender are related to attitudes, beliefs, and behaviors regarding masturbation, homosexuality, abortion, nonmarital sexual relationships, and HIV infection. Thus, **sexology** may be thought of as a unique discipline that identifies important questions related to sexuality issues and finds and integrates answers from biology, psychology, and sociology based on scientific methods of investigation.

Biosexology
Study of the biological aspects of sexuality

Psychosexology
Area of sexology focused on how psychological processes influence and are influenced by sexual development and behavior

Sociosexology
Aspect of sexology that is concerned with the way social and cultural forces influence and are influenced by sexual attitudes, beliefs, and behaviors

Sexology
Unique discipline that identifies important questions related to sexuality issues and finds and integrates answers from biology, psychology, and sociology based on scientific methods of investigation

Theory
Set of ideas designed to answer a question or explain a particular phenomenon

2.3 Theories of Sexuality

A **theory** is a set of ideas designed to answer a question or explain a particular phenomenon (such as, "Why does one person rape another?" and "Why do some individuals of one sex like to dress up in clothes traditionally associated with the other sex?"). In the following sections we review various theoretical perspectives and their applications to human sexuality.

2.3a Biological Theories

Biological theories of sexuality include both physiological and evolutionary theories. **Physiological theories** of sexuality describe and explain how physiological processes affect and are affected by sexual behavior. Cardiovascular, respiratory, neurological and endocrinological functioning, and genetic factors are all involved in sexual processes and behaviors.

Evolutionary or **sociobiological theories** of sexuality explain human sexual behavior on the basis of human evolution. According to evolutionary theories of sexuality, sexual behaviors and traits evolve through **natural selection**. Through this process, individuals who have genetic traits that are adaptive for survival and reproduction are more likely to survive and pass on those traits to their offspring. For women, it is in their sociobiological interest to discriminate among potential partners and mate with one who provides resources for supporting the development of their offspring.

The **biosocial framework**, which emphasizes the interaction of biological/genetic inheritance with the social environment to explain and predict human behavior, is related to evolutionary sociobiological theories. Borrowing from evolutionary psychology, sociobiology, and psychobiology, biosocial theory uses the concept of natural selection to explain such phenomena as mate selection. Natural selection emphasizes that it is natural for the individual to want to survive. Men's tendency to seek young women with whom to procreate is related to the biological fact that young women are more fertile and produce more healthy offspring than older women. Women, on the other hand, tend to seek men who are older and more economically stable because they can provide economic resources for their offspring. Hence, both biological (youth/fertility) and social (economic stability) factors combine to explain the mate selection process.

2.3b Psychological Theories

Biological theories do not account for the influence of personality, learning, thoughts, and emotions on human sexuality. These aspects are explained by psychological theory, including psychoanalytic theory, learning theory, and cognitive/affective theory.

Psychoanalytic Theories

Psychoanalytic theory, originally developed by Sigmund Freud (1856–1939), emphasizes the role of unconscious processes in our lives. This theory dominated early views on the nature of human sexuality. A basic knowledge of Freud's ideas about personality structure is important to understand his theories of sexuality.

Freud believed that each person's personality consists of the id, ego, and superego. The **id** comprises instinctive biological drives such as the need for sex, food, and water. Freud saw human sexuality as a biological force that drives individuals toward the satisfaction of sexual needs and desires. Indeed, one of Freud's most important contributions was his belief that infants and children are sexual beings who possess a positive sexual drive that is biologically wired into their systems.

Another part of the personality, the **ego** deals with objective reality as the individual figures out how to obtain the desires of the id. The ego also must be realistic about social expectations. Whereas the id is self-centered and uninhibited, the ego is that part of the personality that inhibits the id in order to conform to social expectations. While the id operates on what Freud called the *pleasure principle,* the ego operates on the *reality principle.* The ego ensures that individuals do not attempt to fulfill every need and desire whenever they occur. Freud saw rape as a failure of the ego to function properly.

Physiological theory
Theory that describes and explains how physiological processes affect and are affected by sexual behavior

Evolutionary theory
Theory that explains human sexual behavior and sexual anatomy on the basis of human evolution (See also *sociobiological theory.*)

Sociobiological theory
Framework that explains human sexual behavior and sexual anatomy as functional for human evolution (See also *evolutionary theory.*)

Natural selection
Theory that individuals who have genetic traits that are adaptive for survival are more likely to survive and pass on their genetic traits to their offspring

Biosocial framework
Theoretical framework that emphasizes the interaction of one's biological/genetic inheritance with one's social environment to explain and predict human behavior

Psychoanalytic theory
Sigmund Freud's theory that emphasizes the role of unconscious processes in life

Id
Freud's term that refers to instinctive biological drives, such as the need for sex, food, and water

Ego
Freud's term for that part of the individual's psyche that deals with objective reality

Sigmund Freud identified four stages in psychosexual development. Adolescence represents the fourth stage: genital. *Source: Maria McDonald*

The **superego** is the conscience, which functions by guiding the individual to do what is morally right and good. The superego creates feelings of guilt when the ego fails to inhibit the id and the individual engages in socially unacceptable behavior.

Freud emphasized that personality develops in stages. When we successfully complete one stage, we are able to develop to the next one. If we fail to successfully complete any given stage, we become fixated or stuck in it. The four basic psychosexual stages Freud identified are the oral, anal, phallic, and genital stages.

Although Freud developed his theories during an era of sexual repression, he proposed that **libido** was the most important of human instincts. While his libido theory was an important contribution, Freud has been criticized as overemphasizing sexual motivation for behavior. His clinical observations were based on people who came to him with their problems, but he often generalized broadly from them. His work would not meet the standards of scientific objectivity required today.

Karen Horney (1885–1952) recognized the importance of childhood personality development, but she believed that social—rather than sexual—factors are dominant in personality formation. She felt that the need to emerge from the helpless, controlled state of an infant to that of an independent, autonomous individual is the driving force of the development of the individual. To Horney, sex played a minor role in the drive for independence.

Erik Erikson (1902–1994) believed that individuals progress through a series of stages as they develop. However, unlike Freud, he felt that the states are psychosocial, not psychosexual. He believed that central developmental tasks do not involve seeking oral, anal, and genital pleasures; rather they focus on establishing basic trust with people. Also, Erikson felt that personality formation does not end in adolescence but is a lifelong process—and most contemporary psychologists agree.

In contrast to Freud's psychoanalytic view of sexuality, other psychological theories explain human sexual attitudes and behaviors as learned. Learning theories include classical conditioning theory, operant learning theory, and social learning theory.

The idea that boys want to sleep with their mothers strikes most men as the silliest thing they have ever heard. Obviously, it did not seem so to Freud, who wrote that as a boy he once had an erotic reaction to watching his mother dressing. But Freud had a wet nurse and may not have experienced the early intimacy that would have tipped off his perceptual system that Mrs. Freud was his mother.

Steven Pinker, *How the Mind Works*

Classical Conditioning Theories

Superego
Freud's term for the conscience, which functions by guiding the individual to do what is morally right and good

Libido
The sex drive

Classical conditioning
Behavior modification technique whereby an unconditioned stimulus and a neutral stimulus are linked to elicit a desired response

Classical conditioning is a process whereby a stimulus and a response that are not originally linked become connected. Ivan Pavlov (1849–1936), a Russian physician, observed that the presence of food caused dogs to salivate. Because salivation is a natural reflex to the presence of food, we call food an *unconditioned stimulus*. However, if Pavlov rang a bell and then gave the dogs food, the dogs soon learned that the bell meant food was forthcoming and would salivate at the sound of the bell. Hence, the bell became a *conditioned stimulus* because it had become associated with the food and was now capable of producing the same response as the food (an unconditioned stimulus).

Sexual fetishes can be explained on the basis of classical conditioning. A fetish is a previously neutral stimulus that becomes a conditioned stimulus for erotic feelings. For example, some people have a feather, foot, or leather fetish and respond to these stimuli in erotic ways. However, there is nothing about a feather that would serve to elicit erotic feelings unless it was associated with erotic feelings in the past.

Operant Learning Theories

Operant learning theory, largely developed by B. F. Skinner (1904–1990), is also referred to as operant conditioning or radical behaviorism; it emphasizes that the consequences of a behavior influence whether that behavior will occur in the future. Consequences that follow a behavior may maintain, increase, or decrease (including terminate) the frequency of the behavior. A consequence that maintains or increases a behavior is known as **reinforcement**; a consequence that decreases or terminates a behavior is known as **punishment**. A partner who has been reinforced for initiating sexual behavior is likely to do so again. A partner who has been punished for initiating sexual behavior is less likely to do so in the future. Operant conditioning has not been applied in sexuality research as much as classical conditioning and has mainly been used in the treatment of sexual dysfunctions and in unsuccessful attempts to alter sexual preferences.

Social Learning Theories

Another learning-based approach to understanding human sexuality is **social learning theory**, also referred to as modeling, observational learning, or vicarious learning. It emphasizes that a behavior may be increased without direct reinforcement but in anticipation of reinforcement. For example, sexual pleasure and the anticipation of it can be potent reinforcers. Social psychologist Albert Bandura (1925–) put less emphasis on anticipated reward; instead, he emphasized *social learning*, also known as *observational learning*, which posits that we learn by observing and imitating another. For example, we imitate the sexual attitudes and behaviors that we observe in our parents, our peers, and the media. Advertisers are aware of the power of this modeling and hire known, accepted, and approved celebrities to sell products.

Cognitive/Affective Theories

It is a surprising fact that those who object most violently to the manipulation of behavior nevertheless make the most vigorous effort to manipulate minds.

B. F. Skinner, psychologist, *Beyond Freedom and Dignity*

Cognitive/affective theories of sexuality emphasize the role of thought processes and emotions in sexual behavior. The importance of cognitions, or thoughts, in human life was recognized nearly 2,000 years ago by the philosopher Epictetus (55–135), who said, "Man is disturbed not by things, but by the view that he takes of them." Cognitive therapists Aaron Beck and Albert Ellis emphasized that maladaptive or irrational thoughts may result in sexual problems. Thoughts such as "I must always have an orgasm" or "I should always be interested in sex" may result in unnecessary frustration. Through cognitive therapy, which is based on cognitive theory, these cognitions may be examined and changed.

Emotions are related to cognitions. As the preceding example illustrates, changing a person's cognitions will affect the way he or she feels about sexuality. Affective theories of sexuality emphasize the fact that emotions, such as love, jealousy, fear, anxiety, embarrassment, and frustration, may precede sexual expression, may be a component of sexual expression, and/or may be a consequence of sexual activity. *Self-Assessment 2-1* may be used to assess your need for sexual intimacy.

Operant learning theory
Explanation of human behavior that emphasizes that the consequences of a behavior influence whether that behavior will occur in the future

Reinforcement
Consequence that maintains or increases a behavior

Punishment
Consequence that decreases or terminates a behavior

Social learning theory
Framework that emphasizes the process of learning through observation and imitation

Cognitive/affective theory
As related to sexuality, a theory that emphasizes the role of thought processes and emotions in sexual behavior

2.3c Sociological Theories

Sociological theories of human sexuality explain how society and social groups affect and are affected by sexual attitudes and behaviors. The various sociological theoretical perspectives on human sexuality include symbolic interaction, structural-functional, conflict, feminist, and systems theories.

Symbolic interaction theory
Sociological theory that focuses on how meanings, labels, and definitions learned through interaction affect one's attitudes, self-concept, and behavior

Symbolic Interaction Theories

Symbolic interaction theory, which was developed by Max Weber, Georg Simmel, and Charles Horton Cooley, focuses on how meanings, labels, and definitions that are learned through interactions affect our attitudes, self-concept, and behavior.

Self-Assessment 2-1: Need for Sexual Intimacy Scale

Directions

The items that follow address things we may need in life. Some people say we need many things in order to survive (food, shelter, etc.). In the following series of items, rate each one by how much you agree or disagree with it as being something you may need. The term *partner* here refers to a sexual partner (dating partner, boyfriend/girlfriend, long-term partner/spouse).

For each item, identify a number that reflects your level of agreement with the statement given and write that number in the space provided.

1 = Disagree definitely
2 = Disagree mostly
3 = Neither disagree or agree
4 = Agree mostly
5 = Agree definitely

Three Areas of Sexual Intimacy

Need for Sex

1. __ I need to have more sex.
2. __ I need sex every day.
3. __ I need to have an orgasm every day.
4. __ I need to let myself go sexually with someone.
5. __ I need to have sex every couple of days.
6. __ I need someone who is "great in bed."
7. __ I need sex with a lot of partners.
8. __ I need to take control of my partner when we are intimate.

Scoring

Add up the scores for all eight statements (each should have a value between 1 and 5) and divide by 8.
The lowest possible score is 1, suggesting a low need for sex; the highest possible score is 5, suggesting a high need for sex.

Need for Affiliation

1. __ I need a partner who loves me.
2. __ I need someone to love.

3. __ I need companionship.
4. __ I need a companion in life.
5. __ I need to have complete trust in the people I am intimate with.
6. __ I don't need anyone special in my life.
7. __ I need somebody to hold my hand.
8. __ I need a few really good friends.
9. __ I need someone to sleep next to me.

Scoring

Reverse score number 6. (If you selected a 5, replace the 5 with a 1. If you selected a 1, replace it with a 5, etc.). Add each of the nine items (from 1 to 5) and divide by 9. The lowest possible score is 1, suggesting a low need for affiliation; the highest possible score is 5, suggesting a high need for affiliation.

Need for Dominance

1. __ I need my partner to tell me where he or she is at all times.
2. __ I need control over my partner.
3. __ I need my partner to give me what I want (such as financial support, clothes, and a car).
4. __ I need a partner I can manipulate.
5. __ I need the ability to order my partner to have sex with me if I want to.

Scoring

Add each of the five items (from 1 to 5) and divide by 5. The lowest possible score is 1, suggesting a low need for dominance; the highest possible score is 5, suggesting a high need for dominance.

Participants

Participants in the initial scale study conducted in 2008 were 347 students with a mean age of 21, mostly female (61%) and single (92%). Seventy-nine percent reported at least one sexual experience (Marelich & Lundquist, 2008). A second set (Marelich, Shelton, & Grandfield, 2013) of 422 psychology undergraduates also took the scale study. The respondents were at least 18 years of age and reported having had at least one experience of sexual intercourse.

Results

In Marelich and Lundquist's (2008) study, individuals showing a higher need for sex reported more lifetime sexual partners, more one-night stands, less condom use, less ability to discuss condoms with their partners, and greater use of intoxicants during sex. Those showing a higher need for affiliation had a preference for being in a relationship (women more than men), were more likely to be consumed with thinking about their partners, and were less likely to mislead their partners about a positive HIV test. Those showing a high need for dominance had a preference for dominating their partner sexually and were more likely to ask their partners about past sexual experiences and to report that sex is an important part of a relationship.

The second study (Marelich, Shelton, & Grandfield, 2013) revealed that individuals who had a higher need for sex also had higher levels of sexual desire, more unrestricted sexual attitudes, and higher sexual awareness. Those reporting a higher need for dominance engaged in more dominant behaviors, and those reporting a higher need for affiliation had more positive attitudes about emotional support and closeness in relationships. Males reported a higher need for sex and dominance than females.

Validity and Reliability

Details on the validity and reliability of the scale study's findings are available from the author, as noted in the source.

Source: Scale is used with the permission of William D. Marelich (2008), Department of Psychology, California State University—Fullerton.

Wedding rings symbolize the married couple's mutual commitment. *Source: Maria McDonald*

In addition, our definitions of what constitutes appropriate and inappropriate sexual behavior are learned through our relationships with others. Sexual self-concepts, including body image and perception of one's self as an emotional and sexual partner, are also influenced by interactions with others.

An important component of symbolic interaction theory is the concept of **social scripts**, developed by John Gagnon (Gagnon, 1977; Gagnon & Simon, 1973). Social scripts are shared interpretations that have three functions: define situations, name actors, and plot behaviors. For example, the social script operative in prostitution is to define the situation (sex for money), name actors (prostitute and client), and plot behaviors (prostitute will perform requested sexual behaviors for money).

Sexual social scripts operate on three levels—cultural, interpersonal, and intrapsychic (Montemurro, 2014). The *cultural script* for sexual expression is that women are passive and men are aggressive (the take-away cultural message is that women who are aggressive are deviant). *Interpersonal scripts* dictate behavior, so that due to cultural constraints, women approach desirable men less often than men approach desirable women. *Intrapsychic scripts* are conversations that individuals have with themselves about their behavior—women who are sexually aggressive and/or find pleasure in casual sex must contend with being slut-shamed.

An example of a traditional heterosexual social script is that the female is expected to view sex as a relationship, and the male is expected to view sex as recreation.

> *She really had, uh, deep feelings for me, … but I didn't have the same deep feelings for her. I think it was more of a sexual thing for me, but for her it was more of a relationship thing. So I feel kind of bad in that part. Most of my relationships have been like that, where, um, I've broken their hearts. … I've had, I've made plenty, I've made, you know, a couple girls cry.* (Masters et al., 2013, p. 416)

Research has revealed traditional gender-role social scripting in hookups. Men are expected to initiate sexual activity and "control women's sexuality and women are expected to take a more passive role and accept male control" (Yazedjian et al., 2014).

While there are general sexual social scripts for women and men, scripts are not uniform; rather, they are complex and diverse. For example, some men expect and prefer sex in the context of a relationship (Morrison et al., 2014), and some women view sex as sport and pleasure (Fulle et al., 2015).

Structural-Functional Theories

Social scripts
Shared interpretations that have three functions: define situations, name actors, and plot behaviors

Structural-functional theory
Framework that views society as a system of interrelated parts that influence each other and work together to achieve social stability

Structural-functional theory, developed by Talcott Parsons (1902–1979) and Robert Merton (1910–2003), views society as a system of interrelated parts that influence each other and work together to achieve social stability. The various parts include family, religion, government, economics, and education. Structural-functional theory suggests that social behavior may be either functional or dysfunctional. Functional behavior contributes to social stability; dysfunctional behavior disrupts social stability. The institution of marriage, which is based on the emotional and sexual bonding of individuals, may be viewed as functional for society because it provides a structure in which children are born and socialized to be productive members of society. Hence, in the United States there is greater social approval for sex within marriage—children born to a married couple are cared for by the parents and not by social services (as is more common of children born to single parents). Extramarital sex is viewed as

dysfunctional because it is associated with divorce, which can affect the emotional well-being of children and disrupt their care and socialization.

Structural-functional theory also focuses on how parts of society influence each other and how changes in one area produce or necessitate changes in another. For example, the educational system in a society affects its birthrate in that women with low levels of education tend to have high birthrates. Hence, reducing population growth may involve increasing education for women. In another example of the structural-functional connection, the changing socioeconomics of the working world in the United States—which includes more women in the workforce today than in previous generations—has influenced the government to establish laws concerning sexual harassment and family leave.

Conflict Theories

Whereas structural-functional theory views society as composed of different parts working together, **conflict theory**, developed by Karl Marx and Ralf Dahrendorf, views society as composed of different parts competing for power and resources. For example, anti-abortion groups are in conflict with pro-choice groups; gay rights advocates are in conflict with groups who oppose gay rights; and insurance companies are in conflict with consumers about whether abortion care, contraceptives, and sexual enhancement medications such as Viagra® should be covered in health insurance plans.

Feminist Theories

Feminist theory, which overlaps with conflict theory, focuses on the imbalance of power and resources between women and men, exploring its effect on sexuality, with a wider view of gender inequity in both domestic and public life

In the feminist view, women's subordination is reflected in limitation of reproductive health care (denial of or reduced access to contraceptives and abortion); restrictions on and objectification of women's appearance, behavior, and sexual activity; stigma associated with the unmarried state; and imbalance in domestic responsibilities and childrearing, in some cultures completely restricting women to the home (purdah). Women are also underrepresented in the public sphere, with both law and custom restricting their political power, education, and workforce participation and remuneration

Feminist analysis targets the **patriarchy**—the global system in which females are subordinate to or the property of a male, usually their husbands and/or fathers. This sociopolitical framework, based on familial descent traced through the male as the head of the family, defines women's and girls' worth in relation to male interests and has resulted in abuse (including sexual assault) of the human rights of women and children around the globe.

Mary Wollstonecraft's (1759–1797) historic 1792 treatise, "Vindication of the Rights of Women," set the stage for modern feminist theory, which developed in three stages. The late 19th century "first-wave" feminists Elizabeth Cady Stanton (1815–1902) and Susan B. Anthony (1820–1906), among others, risked imprisonment and physical assault in their struggle for suffrage. In the second wave of the 1960s and 1970s, reproductive rights and equal treatment under the law were dominant concerns. Feminism's third wave, from the 1990s to the present, champions intersectionality, including the voices of women of color and LGBTQ rights.

Systems Theories

Sex lies at the root of life, and we can never learn to reverence life until we know how to understand sex.

Havelock Ellis, early sex researcher

Systems theory, developed by Murray Bowen (1913–1990), emphasizes the interpersonal and relationship aspects of sexuality. For example, whereas a biological view of low sexual

Conflict theory
Sociological theory that views society as consisting of different parts competing for power and resources

Feminist theory
Perspectives that analyze discrepancies in equality between men and women and how these imbalances affect sexuality, research studies in sexuality, and sexual health-care delivery

Patriarchy
The global system in which females are subordinate to or the property of a male, usually their husbands and/or fathers

Systems theory
Theoretical framework that emphasizes the interpersonal and relationship aspects of sexuality

desire emphasizes the role of hormones or medications and a psychological view might emphasize negative cognitions and emotions regarding sexual arousal, a systems perspective views low sexual desire as a product of the interaction between two partners. Negative interaction between partners can affect their interest in having sex with each other.

Table 2-1 presents different theoretical explanations for various observations of sexuality.

TABLE 2-1 | Sexuality Observations and Theoretical Explanations

Observation	Theory
1. Men are more sexually aggressive than women.	**Operant Learning** Men have been reinforced for being sexually aggressive. Women have been punished for being sexually aggressive. **Social Script** Our society teaches men to be more aggressive and women to be more passive sexually. Each sex learns through interactions with parents, peers, and partners that this is normative behavior. **Physiological** Men have large amounts of androgen, and women have larger amounts of progesterone, which accounts for male aggressiveness and female passivity.
2. Pornography is consumed primarily by men.	**Operant Learning** Men derive erotic pleasure (reinforcement) from pornography. **Social Script** Men influence each other to regard pornography as desired entertainment. Men share information about Internet porn sites; this reflects a norm regarding pornography among males. Women rarely discuss pornography with each other. **Evolutionary** Men are biologically wired to become erect in response to visual sexual stimuli.
3. In most societies, men are allowed to have a number of sexual partners.	**Structural-Functional** In many societies, women outnumber men. Polygyny potentially provides a mate for every woman. **Feminist** The social, political, and economic power of men provides the context for men to exploit women sexually by making rules in favor of polygyny. **Evolutionary** Men are biologically wired for variety; women, for monogamy. These respective wirings produce reproductive success for the respective sexes.
4. Women and men tend to report lower levels of sexual desire in their elderly years.	**Social Script** Aging women and men learn social scripts that teach them that elderly persons are not expected to be sexual. **Systems** Elderly persons are often not in a relationship that elicits sexual desire. **Biological** Hormonal changes in the elderly account for decreased or absent sexual desire (physiological). There is no reproductive advantage for elderly women to be sexually active; there is minimal reproductive advantage for elderly men to be sexually active (evolutionary).
5. Extradyadic relationships, including marital infidelity, are common.	**Operant Learning** Immediate interpersonal reinforcement for extradyadic sex is stronger than delayed punishment for infidelity. **Biological** Humans (especially men) are biologically wired to be sexually receptive to numerous partners. **Structural-Functional** Infidelity reflects the weakening of the family institution. **Systems** Emotional and sexual interactions between couples are failing to meet the needs of one or both partners.

2.4 Eclectic View of Human Sexuality

Whereas some scholars who study human sexuality focus on one theoretical approach, others propose an **eclectic view** that recognizes the contributions of multiple perspectives. For example, sexuality of the aging can be understood in terms of a comprehensive view of the various biological, psychological, and social aspects of the aging process. For example, in the eclectic view, decreased libido in older people is not only a function of decreased testosterone/progesterone, but also of other factors such as altered self-concept ("I am no longer sexually attractive") and cultural expectations that deny a strong libido among the elderly.

2.4a Early Sex Researchers

Several early 20th-century scientists were instrumental in shifting society's ideas about sex from a religious perspective toward the consideration of scientific ideologies and discoveries. These pioneers include Richard von Krafft-Ebing, Havelock Ellis, Alfred Kinsey, and William Masters and Virginia Johnson.

Richard von Krafft-Ebing (1840–1902) was a Viennese psychiatrist and sexologist who focused on the study of abnormal, or *pathological,* sexuality. Originally published in 1886, *Psychopathia Sexualis* (1965) contains Krafft-Ebing's case histories of more than 200 individuals—some of them bizarre. For example, he revealed that some parents applied a white-hot iron to the clitoris of young girls for "treatment" of masturbation.

Havelock Ellis (1859–1939) emphasized that sexual behavior was learned social behavior, that deviant sexual behavior was merely that which society labeled as abnormal, and that an enjoyable sex life (a desirable goal) was not something that just happened, but rather had to be achieved.

Alfred Kinsey (1894–1956) is regarded as the pioneer of human sexuality research. His marriage course at Indiana University became too controversial because of its explicit nature, so he was given the choice to tone it down or collect sex research full-time. His choice of the latter resulted in the Institute for Sex Research, which housed the sexual histories of more than 18,000 people. Kinsey personally interviewed 8,000 individuals in extensive interviews that lasted 1.5–2 hours each. His major impact was in influencing society to consider sex as an acceptable topic of social conversation.

But Kinsey's data have been criticized as not being representative of the general public. In the 1940s and 1950s, he drove to Chicago from Indiana University to interview anyone who would allow him to do so. This resulted in prostitutes, homosexuals, substance abusers, and individuals with lower socioeconomic backgrounds being overrepresented in his research. The National Sex Study at Indiana University updated his research in 2012.

While Kinsey and his predecessors researched the cultural attitudes on and frequency of sexual behavior, Masters and Johnson provided data on physiological responses during sex. *Up Close 2-1* details the credentials, research, and relationship of Masters and Johnson.

Eclectic view
View that recognizes the contribution of multiple perspectives to the understanding of sexuality

Up Close 2-1 Masters and Johnson

William Masters and Virginia Johnson are best known for their book *Human Sexual Response* (1966), which detailed their 11-year research study in which they observed over 10,000 orgasms (via sexual intercourse and masturbation) experienced by almost 700 volunteers (382 females and 312 males) at Washington University in St. Louis, Missouri. They identified and provided data on the sexual response cycle (excitement, plateau, orgasm, resolution) and the physiological changes that occur during each stage (heart rate, breathing, muscle contractions).

Dr. Masters initiated the sex research and soon recognized the need for a female assistant. Virginia Johnson, a twice-divorced mother of two, was soon hired and became aware that having sex with Dr. Masters was expected, because he told her that they needed to know what their volunteers were experiencing physiologically when connected to the various machines. She accepted the position without protest, and they became Masters and Johnson. Today, his behavior would be regarded as blatant sexual harassment.

The couple married 5 years after the publication of their blockbuster best-seller. Their biographer, Thomas Maier (2009), suggested that their marriage was more of a business than a love connection. Johnson said, "I probably never loved him" (p. 222), and Masters later said of the marriage, "It was convenient" (p. 238). The couple launched a lucrative private practice in sex therapy, charging $5,000 for 2 weeks in their offices in St. Louis. At one time, they had a 6-month waiting list with over 400 names. Their influence on sex therapy was dramatic. Across America in the 1970s, there were over 5,000 sex therapy clinics offering variations of Masters and Johnson therapy, but only 50 sex therapists were actually trained by Masters and Johnson.

Behind the Masters and Johnson enterprise there were questions and problems. Johnson had no formal training—she was a high school graduate who wanted to go to college but never did. Indeed, Masters, an obstetrician, had no sex therapy training. The extent of his education as a clinician was a few weeks with a psychiatrist during his residency. Hence, the world-famous sex therapists had no clinical training at all.

Another concern was the lack of training of the clinical staff of the Masters and Johnson Institute. While initial staff members Robert Kolodny and Sallie Schumacher were credentialed, some subsequent staff members had questionable qualifications. For example, in the later years, researcher Robert Meyners had a PhD in theology—and was the son-in-law of Virginia Johnson.

The allegation that Masters cooked the data for his and Johnson's controversial book *Homosexuality in Perspective* (1979) is even more disturbing than their lack of formal training. In the book, theoretically based on 67 cases (54 men and 13 women) of homosexuals who wanted to convert to heterosexuality, Masters boasted a 70% success rate. However, when clinic director/physician Robert Kolodny of the Masters and Johnson Institute asked to see the data and hear the tape recordings, Masters refused. "He made it up," Johnson said (Maier 2009, p. 294).

There were other problems. In the 1970s, the use of sex surrogates (who worked with 41 men with problems of premature ejaculation and erectile dysfunction) became visible with a $2.5 million federal lawsuit filed by the husband of Barbara Calvert. He claimed that he and his wife had been patients of Masters and Johnson and that the use of his wife as a sex surrogate was a violation of the patient-therapist relationship. Details of the out-of-court settlement were never made public.

After 21 years of marriage, Masters and Johnson divorced (initiated by Masters, who wanted to marry a previous partner), and their collaboration began to unravel. By the end of the 1980s, the Masters and Johnson Institute was losing money. Numerous books, such as *The Pleasure Bond* (1976), *Masters and Johnson on Sex and Human Loving* (1986), and *Crisis: Heterosexual Behavior in the Age of HIV* (1988), never matched the sales of *Human Sexual Response. Crisis*, cowritten by Robert Kolodny, gained notoriety for its bizarre views on AIDS, including the false claim that it could be acquired by casual contact. The subsequent critical backlash was a factor in Masters' 1992 decision to resign as the Institute's director and its subsequent closure in 1994.

Howie Masters, the son of Bill Masters by his first wife, said, "In the end my father walked away as a pauper" (Maier, 2009, p. 362). Suffering from Parkinson's disease and dementia, William Masters died in 2001. Johnson did not remarry and died in 2013.

Despite these and other problems, Masters and Johnson's research on the physiology of sexual response made a unique contribution to the literature, and some of their procedures, such as sensate focus, are standard sex therapy techniques today. Masters and Johnson, like Alfred Kinsey, remain pioneers in the field of human sexuality. Their lives and work were featured in the 2013 Showtime® television series *Masters of Sex*, based on the 2009 book by Thomas Maier.

2.5 Conducting Sex Research: A Step-by-Step Process

Research is valuable because it helps provide evidence for or against a hypothesis. For example, while it is hypothesized that hookups are recreation and rarely transition to sustained romantic relationships, almost a quarter of the respondents in a 2015 study reported such an experience (Erichsen et al., 2015). The steps in conducting research are identifying a research question, reviewing the literature, formulating hypotheses, operationalizing the research variables, collecting data, and analyzing and interpreting the results.

> *We are recorders and reporters of the facts—not judges of the behavior we describe.*
>
> Alfred Kinsey, early sex researcher

2.5a Identifying a Research Question

A researcher's interest in a particular research question may be based on a personal life experience or may involve concern about certain human or social problems. Researchers are generally hired by the government, by industry, or by some other organization to conduct research and investigate questions of interest.

> *The scientist is not a person who gives the right answers, but one who asks the right questions.*
>
> Claude Levi-Strauss, French anthropologist

2.5b Reviewing the Literature

Numerous journals (some identified earlier in this chapter) publish research on human sexuality. Reviewing the articles in these and other journals enables researchers to discover what other researchers have already learned about a topic, provides them with ideas about new research questions, and suggests ways to conduct research.

2.5c Formulating a Hypothesis and Operationalizing Variables

To answer their research questions, researchers must transform their questions into testable **hypotheses**, a tentative or educated guess designed to test a theory. Hypotheses involve predictions about the relationship between two or more variables—for example, alcohol and condom use. A **variable** is any measurable event or characteristic that varies or is subject to change. There are two types of variables. The **independent variable** is presumed to cause or influence the dependent variable. The **dependent variable** is measured to assess what, if any, effect the independent variable has on it. The following is an example of a sex research hypothesis and its variables:

1. *Hypothesis:* High alcohol consumption is associated with lower condom use.
2. *Independent Variable:* Alcohol consumption
3. *Dependent Variable:* Condom use

Because human sexual behavior and attitudes are complex and influenced by many factors, researchers often assess the effects of several independent variables on one or more dependent variables. For example, condom use is also influenced by the status of the relationship and whether the couple reports being in love. Partners who are hooking up are more likely to use a condom than cohabiting couples who report being in love.

Researchers must also specify how they will **operationalize** variables and develop an **operational definition** (working definition) of their terms. They must also apply working definitions to such terms as *sexual satisfaction, sexual desire, pornography, sexual orientation, rape,* and *cohabitation*. An operational definition of cohabitation is "two unrelated adults of the opposite sex who live in the same residence overnight for four nights a week for at least three months." Such specifics eliminate lovers who stay over at each other's apartment on the weekend, for example.

Hypothesis
A tentative and testable proposal or an educated guess about the outcome of a research study

Variable
Any measurable event or characteristic that varies or is subject to change

Independent variable
Variable that is presumed to cause or influence the dependent variable

Dependent variable
Variable that is measured to assess what, if any, effect the independent variable has on it

Operationalize
Define how a variable will be measured

Operational definition
Working definition; how a variable is defined in a particular study

2.5d Caveats in Sex Research

Researchers are not immune to bias. Alfred Kinsey, as a biologist and international expert on the gall wasp, was a taxonomist. As such, he classified and described variations within and across species. In trying to find all the variations in human sexual behaviors and validate sexual variety, he pursued unusual sexualities and may have spent more time revealing the extremes of sexuality (for example, pedophilia) than reflecting the population as a whole.

Another source of potential bias occurs when researchers present an interpretation of what other researchers have done. Two layers of bias may be operative here: (a) when the original data are collected and interpreted and (b) when the second researcher reads the study of the original researcher and makes his or her own interpretation. Much of this text is based on the authors' representations of someone else's research. As a consumer, you should be alert to the potential bias in reading such secondary sources. To help control for this bias, we have provided references to the original sources for your own reading.

Some researchers are deliberately dishonest, unethical, and deceptive. Earlier in this chapter we noted that William Masters falsified his data on reparative therapy. In Chapter 5, Gender and Sexuality, we note that Dr. John Money of Johns Hopkins University published research that related the opposite of what his subject reported. Dr. Anil Potti of Duke University changed data on research reports and provided fraudulent results (McCarthy, 2015). In 2014, a study that examined the potential impact of being in contact with a gay person on your opinions toward gay marriage was published in *Science* magazine (LaCour & Green, 2014). In 2015, the article was retracted due to statistical irregularities and false information about the funding for the survey (McNutt, 2015).

In addition to deception by researchers, research subjects ("mischievous responders") may sometimes present dishonest or invent irrelevant or false answers (Katz-Wise et al., 2015). Table 2-2 summarizes other caveats to keep in mind when dealing with research reports.

TABLE 2-2 | Caveats in Sex Research

Caveat	Consequences	Example
The sample wasn't random.	Cannot generalize the findings	The sexual attitudes and behaviors of college students are not the same as those of other adults.
There was no control group.	Inaccurate conclusions	For purposes of comparison, studies on the effect of exposure to pornography on sexual satisfaction need a control group of respondents not exposed to pornography.
There were differences (such as age) between groups of respondents.	Inaccurate conclusions	May be due to passage of time or to cohort differences.
The terms were not operationally defined.	Inability to measure what is not clearly defined	What are "hooking up," "sexual satisfaction," "open sexual communication," and "orgasm"?
A research bias was present.	Slanted conclusions	A researcher studying the preference for sex toy use should not be funded by a maker of sex toys.
There has been a time lag since the original research.	Outdated conclusions	The often-quoted Kinsey sex research is over 60 years old.
The data are distorted.	Invalid conclusions	Research subjects exaggerate, omit information, and/or recall facts or events inaccurately. Respondents may remember what they wish rather than what really happened.

An additional research concern is the question of whether those who do not respond to Internet surveys are different from those who do. In a study of 2,049 individuals about whom extensive information was known, Busby and Yoshida (2015) found virtually no differences (of 18 factors, such as personality, family of origin measures, etc.) between those who had valid email addresses and those who did not.

Fahs (2016) also emphasized that there are "margins of the interview" that are challenging insights to identify and that are easily missed. For example, discussions of "first sex" (which is sometimes assumed to be first intercourse) may evoke stories of sexual trauma or nonpenetrative sex.

Finally, surveys sometimes overlook important data. McClelland and Holland (2016) identified 136 instances in which respondents diagnosed with late-stage breast cancer had taken the Female Sexual Function Index and made clarifications and corrections or noted items as "not applicable" in the margins of the survey printout. These marginalia give the researcher important feedback about the respondent's life and the research design that are often ignored.

Technology and Sexuality 2-1: Online Surveys

Although the Internet has existed for over 20 years, some researchers remain skeptical of using it as a resource for collecting data. Concerns include the time investment involved in online research, the limitations of a sample (demographic bias), and a low response rate. Are these valid concerns?

Twenty years ago, the online population was different than it is today. Previously, many individuals connected to the Internet with a dial-up connection, so only those who could afford to pay the Internet service provider for a faster connection would be included in the survey. Today, more than 70.0% of American households report Internet access, and 73.4% have a high-speed connection (File & Ryan, 2014). In addition, individuals (particularly American youth) are increasingly using smartphones and tablets to connect to the Internet. While 95% of teenagers report that they have online access, 74% report that they go online through mobile devices (Madden et al., 2013).

In regard to the previous concern by researchers that certain groups, such as lower-income individuals who lack online access, would be underrepresented in online research, the reality is that today's youth from lower socioeconomic backgrounds do have access to the Internet, but it tends to be through mobile devices rather than traditional desktop computers (Madden et al., 2013). Online research has also proved valuable in reaching populations that have previously been difficult to access, such as people who identify as LGBTQ or those who engage in high-risk health behaviors, including substance abuse (Matthews & Cramer, 2008; Ramo & Prochaska, 2012).

Online research tools have also improved. No longer must researchers know how to write HTML code in order to develop surveys. Today, a variety of apps and online survey companies can create a survey from the researcher's questions. Universities also provide research assistance, including survey development, online hosting of surveys for respondent convenience, and data analysis format tools, such as SPSS statistics software.

While online surveys have numerous advantages, however, problems remain, including a lower response rate than paper surveys (Kongsved et al., 2007). Anonymity is another concern. If a survey link is emailed to a potential respondent, the researcher can link the answers to the email, thus compromising anonymity (Sue & Ritter, 2012). This problem has been solved by posting the survey on a website and providing respondents with a password to input their responses.

Despite such concerns, technology is increasingly used to conduct research in sexuality. Social networking sites such as Facebook and Twitter are being used to recruit participants to complete surveys, blogs are being used as references for qualitative research, and therapy is being offered online via Skype™ sessions (Andersson & Titov, 2014; Ramo & Prochaska, 2012; Sato et al., 2015). Indeed, the Internet has become the researcher's tool of choice.

2.5e Research Ethics: Protection of Human Subjects

It is important to protect the individuals who participate in research. The American Psychological Association charges psychologists to uphold "high standards of ethics, conduct, education and achievement" (APA, 2012). While these ethics often focus on issues relevant to clinical work (APA, 2010), they are equally important in reference to participants involved in research projects. A major principle of ethics in regard to conducting research is **informed consent**: The person participating in the research project must be fully informed as to the risks and dangers and must voluntarily agree to participate. While Nazi Germany provides egregious examples of forcing patients to submit to various research projects against their will, the United States has also been guilty of exposing subjects to physical harm without their knowledge.

In 1932, the U.S. Public Health Service launched a research study known as the Tuskegee Syphilis Experiment at Tuskegee Institute in Tuskegee, Alabama. Nearly 400 black men who had syphilis were enrolled in the project to determine how the disease spreads, progresses, and kills. The men were not told that they had syphilis, and they were not treated for it—even when penicillin became a standard cure in 1947, while the study was still active. The participants were told that they had "bad blood," a euphemism to describe several illnesses, including syphilis, anemia, and fatigue. For their willingness to be involved in the study, the men were given free meals and free burial insurance (Jones, 1993).

The experiment lasted four decades, until public health workers leaked the story to the media. By then, dozens of the men had died, and many of their wives and children had been infected. In 1973, the National Association for the Advancement of Colored People (NAACP) filed a class-action lawsuit. The suit culminated in a $9 million settlement divided among the study's surviving participants, who received free health care, as did their infected wives, widows, and children (NPR, 2002).

The National Research Act, the National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, and the Office for Human Research Protections set ethical standards and guidelines for supervising federally funded clinical trials. Central to these guidelines is individual informed consent (Mays, 2012). In 1997, President Bill Clinton apologized to the survivors of the Tuskegee experiment, pledging to ensure that such unethical research would never be repeated.

Another egregious example of deceptive research occurred in Guatemala from 1946 to 1948. U.S. Public Health Service physicians deliberately infected prisoners, soldiers, and patients in a mental hospital with syphilis and, in some cases, gonorrhea. A total of 696 men and women were exposed to syphilis without their knowledge. When the subjects contracted the disease, they were given antibiotics, although it is unclear if all infected parties were cured. This study was hidden from public exposure for even longer than Tuskegee, since there were only a few articles published in Spanish—in contrast to 13 published reports on the Tuskegee example of "malfeasance and ethical failings" (Reverby, 2012, p. 493). In October 2010, the United States formally apologized to the citizens of Guatemala for conducting these experiments.

While not a government-funded study, independent researcher Laud Humphreys' participant-observer study of the British "tearoom trade" also violated the principle of informed consent. Humphreys served as a "watch queen" (lookout) during the study, observing sexual encounters between same-sex strangers in public bathrooms without revealing his research role. He recorded participants' automobile license numbers and used them to trace the owners' identities and addresses. A year later, he included these men as participants in an unrelated social health survey that he conducted with a colleague. In this way, he not only participated in the study himself, but he also obtained background and personal information on tearoom clients without their

Informed consent
In the context of participants in a research project, voluntary agreement to participate based on the provision of full information as to the project's risks and dangers

knowledge or approval. In a retrospective discussion of his research, Humphreys (1975) responded to ethical critiques and agreed with the criticism of the tracing of license numbers to interview men in their homes, admitting that he put these men at risk of arrest by law enforcement officers.

Per the National Research Act, to ensure compliance with human research protocol, researchers are required to obtain approval from the Institutional Review Board (IRB) of their university or institutional affiliation. These panels review each research proposal requesting federal funding to ensure that the expected research ethics are being followed—including informed consent. Research involving human subjects is required to meet the requirements published in "Ethical Principles and Guidelines for the Protection of Human Subjects of Research," also known as the Belmont Report (http://bvtlab.com/NR99q), named after the Belmont Conference Center, where the Commission met when drafting the report in 1976.

The three basic principles protecting human subjects are respect of persons, beneficence, and justice. *Respect of persons* includes protecting those with diminished capacity. *Beneficence* means doing no harm, maximizing possible benefits, and minimizing possible harms. *Justice* requires the researcher to treat all subjects equally.

It is a capital mistake to theorize before one has data.
Arthur Conan Doyle, British author (via Sherlock Holmes)

BVT Lab

Visit **www.BVTLab.com** to explore the student resources available for this chapter.

2.6 Methods of Data Collection

After identifying a research question, reviewing the literature, formulating a hypothesis, and operationalizing variables, researchers collect data. Methods of data collection include experimental research, survey research, field research, direct laboratory observations, and case studies.

2.6a Experimental Research

Experimental research involves manipulating the independent variable to determine how it affects the dependent variable. In conducting an experiment, the researcher recruits participants and randomly assigns them to either an experimental group or a control group. After measuring the dependent variable in both groups, the researcher exposes participants in the experimental group to the independent variable—also known as the experimental treatment. Then the researcher measures the dependent variable in both groups again and compares the experimental group with the control group. Any differences between the groups may be due to the experimental treatment.

The importance of a control group was illustrated in the research of Willoughby and colleagues (2014), who found a link between pornography consumption and diminished self-worth and increased depressive symptoms. However, no such associations were found when control variables were taken into consideration.

The major strength of the experimental method is that it provides information on causal relationships, showing how one variable affects another. Its primary weakness is that experiments are often conducted on small samples, usually in artificial laboratory settings. For this reason, the findings may not be generalizable to other people in natural settings.

We must conduct research and then accept the results. If they don't stand up to experimentation, Buddha's own words must be rejected.
Dalai Lama, Tibetan Buddhist spiritual leader

Experimental research
Research methodology that involves manipulating the independent variable to determine how it affects the dependent variable

The winning numbers of the lottery are chosen at random—each number has as much of a chance to be selected as any of the others. To generalize one's findings to the larger population, the researcher's sample should be representative.
Source: Maria McDonald

2.6b Survey Research

Most research in sexuality is **survey research** (Fletcher et al., 2013), which involves eliciting information from respondents using questions. An important part of survey research is selecting a **sample**, or a portion of the population in which the researcher is interested. Ideally, samples are representative of the population being studied. A **representative sample** allows the researcher to assume that responses obtained from the sample are similar to those that would be obtained from the larger population

Most sex research studies are self-reported and are not based on representative samples. Instead, they are conducted on convenient samples, such as college students to whom researchers have easy access.

Another problem with research is the nature of volunteers. Students who volunteer for sexuality research have been shown to be more likely to have had sexual intercourse, have performed oral sex, score higher on sexual esteem and sexual sensation seeking, and report sexual attitudes that are less traditional than those of nonvolunteers (Wiederman, 1999). Wiederman cautioned that if such volunteers are not representative, the validity of sexuality research might be particularly suspect. Notwithstanding these issues with samples, there are several kinds of survey research.

Interviews

Survey research
Research that involves eliciting information from respondents using questions

Sample
Portion of the population that the researcher studies to attempt to make inferences about the whole population

Representative sample
Sample the researcher studies that is representative of the population from which it is taken

Interview survey research
Type of research in which trained interviewers ask respondents a series of questions and either take written notes or record the respondents' answers, over the telephone, online, or face-to-face

After selecting their sample, survey researchers interview people or ask them to complete written or online questionnaires, as is seen, for example, in researcher Beth Montemurro's (2014a) interviews of 95 females in regard to their sexual socialization. In **interview survey research**, trained interviewers ask respondents a series of questions and take written notes or record the respondents' answers. Interviews may be conducted over the telephone, face-to-face, or online via an application such as Skype.

My latest survey shows that people don't believe in surveys.
Laurence J. Peter, Canadian educator and author

Interview survey research enables the researcher to clarify questions for the respondent and follow up on answers to particular questions. Face-to-face interviews are an effective method of surveying individuals who do not have a telephone, Internet connection, or mailing address.

A major disadvantage of interview research is the lack of privacy and anonymity involved. Respondents may feel embarrassed or threatened when asked to answer questions about sexual attitudes and behaviors. As a result, some may choose not to participate, and those who do may conceal or alter information to give socially desirable answers such as, "No, I have never had intercourse with someone other than my spouse during my marriage" or "Yes, I use condoms every time I have sex."

Other disadvantages of interview survey research include the time and expense required. Interviews can easily last over an hour, with some ongoing studies taking far longer, and the cost can be enormous when including interviewer training, transportation to the respondents' homes, and computer data entry. Telephone interviews are less time consuming and cost less but may yield less information since nonverbal behavior, which may prompt follow-up questions, cannot be observed.

Although face-to-face interviews are often conducted one-on-one, sometimes they are held in a small group called a **focus group**. Advantages of focus group research include the minimal expense of time and money and the fact that it allows participants to interact and raise new issues for the researcher to investigate. Respondents can clarify their responses and respond in more depth than they would in a survey. A disadvantage of the focus group is its limited sample size, which means that the data may not be representative of the larger research population.

Questionnaires

Instead of conducting face-to-face or phone interviews, researchers may develop questionnaires that they give to a sample of respondents or post on the Internet, where respondents answer in private. Such online questionnaire surveys also provide large quantities of data that can be analyzed relatively inexpensively as compared to face-to-face interviews or telephone surveys. Such surveys yield less data, yet take a great deal of time to complete.

Because researchers do not ask respondents to write their names on questionnaires, questionnaire research provides privacy and anonymity for the research participants. (Surveys linked to a person's email or IP address are not anonymous.) However, respondents sometimes do provide inaccurate answers to questionnaires. Data collected on the results of the honesty of a question on a self-administered questionnaire have found that between 5% and 20% (varying by sex and race) admitted that they had lied during previous interviews. Many respondents were also incorrect in remembering their previous answers (Udry, 1998).

When sexual information is sensitive or potentially stigmatizing, obtaining accurate information may be especially challenging. For example, given the social pressure to avoid behaviors that increase risk to HIV exposure, respondents may find it difficult to admit they perform such behaviors.

Studies on sexuality and relationships are commonly found in popular magazines such as *Cosmopolitan* and online. Sometimes these magazines or websites conduct their own research by asking readers/visitors to complete questionnaires and mail them to the magazine editors or to take a survey online. The survey results are published in subsequent issues of the magazine or on the website.

The results of magazine and online surveys should be viewed with caution because the data are not based on representative samples. Other problems include the inadequacy of some questions, the methods of analysis, and the inherent bias of the publication or website, which wants to reflect a positive image of its readership. Results that show the respondents in a negative light are not likely to be published.

2.6c Field Research

Field research, or *fieldwork*, involves observing and studying social behaviors in the settings in which they occur naturally. Field research is conducted in two ways. In **participant observation** research, to obtain an insider's perspective of the people and/or behavior being observed, the researcher takes part in the phenomenon being studied. For example, a researcher might go nude at a nudist resort to observe client behavior patterns.

In **nonparticipant observation** research, the investigators observe the phenomenon being studied but do not actively participate in the group or the activity. For example, researchers could study nude beaches and strip clubs as observers, without taking off their clothes.

Focus group
Interviews conducted in a small group and typically focused on one subject

Field research
Method of data collection that involves observing and studying social behaviors in settings in which they occur naturally

Participant observation
Type of observation in which the researcher participates in the phenomenon being studied to obtain an insider's perspective of the people and/or behavior being observed

Nonparticipant observation
Type of research in which investigators observe the phenomenon being studied but do not actively participate in the group or the activity

The primary advantage of field research of both types is that it yields detailed, descriptive, and direct information about the behaviors, values, emotions, and norms of those being studied. However, the individuals being studied may alter their behaviors if they know they are being observed, and researchers who do not let the individuals know they are being studied may be violating ethical codes of research conduct. Another potential problem with field research is that the researchers' observations are subjective and may be biased. In addition, because field research is usually based on small samples, the findings may not be generalizable.

2.6d Direct Laboratory Observation

We previously discussed the work of William Masters and Virginia Johnson, who provided laboratory data on human sexual response. It was not until their work that laboratory analysis of sexual behavior/response became legitimate.

Problems with laboratory-based research include the use of volunteers. Are those who volunteer to participate in such research similar to those who do not? Research volunteers are more likely to be sexually experienced, more interested in sexual variety, and less guilty about sex than nonvolunteers. Thus, volunteer samples may not be representative of the group from which they are recruited, and caution should be used in making generalizations based on the findings.

2.6e Case Studies

A **case study** is a research approach that involves conducting an in-depth, detailed analysis of an individual, group, relationship, or event. Data obtained in a case study may come from interviews, observations, or analysis of records (medical, educational, and legal). Like field research, case studies yield detailed qualitative or descriptive information about the experiences of individuals. An example of a case study is that of a 29-year-old man who was anxious about talking with, touching, or kissing a woman. Surrogates were used to help him feel more comfortable with women, which subsequently enabled him to participate in a happy cohabiting relationship (Zentner & Knox, 2013).

Case study
Research method that involves conducting an in-depth, detailed analysis of an individual, group, relationship, or event

Case studies are valuable in providing detailed qualitative information about the experiences of individuals and groups. The main disadvantage of the case study method is that findings based on a small sample size (in some cases, a sample size of one) are not generalizable.

Public Funding for Sex Research?

Conducting large-scale sex research is expensive. Staff members are needed to draw samples, conduct interviews, analyze data, interpret findings, and write up the results. Who pays for sex research? Funding may come from private organizations and corporations, universities, or government agencies. Using government funds is a controversial practice in the United States.

Congress is often not convinced of the validity of providing funding for sex research and fears the retribution of the voting public. Members of Congress also cite morality issues and suggest that funding should be used for more pressing concerns, such as finding the cure for cancer or autism or for veterans' needs. Sex researchers, such as Heather Rupp of the Kinsey Institute, note that sexuality research has a greater chance of being funded when tied to health-related issues (Merta, 2010).

Typical Arguments for Funding Sex Research

Taxpayers fund projects all the time. Most of our tax money goes to things that we do not understand and to things that do not benefit the population as a whole. Sex research is something that can benefit people on every level of society. Sexual dysfunctions, STIs, AIDS, and other sexual concerns do not discriminate—they are problems that affect the old and the young, the rich and the poor. Sex research has given us answers and solutions to many problems about sex and related issues. New drugs have been discovered to treat sexual problems such as AIDS and erectile dysfunction. Without sex research, we would not have these medications to treat life-threatening disease or to enhance sexual encounters. The more funding sex research gets, the more we learn about sexuality. The more we know about sex and sexuality, the better.

Typical Arguments Against Public Funding Sex Research

People pay enough taxes already; sex research is the last thing people need to be throwing their money away on. Therefore, the public should not fund sex research. There are more important things to be putting tax money toward—like education and health care. Sex researchers seem to be doing fine being funded by private organizations, so there's no reason for the public to help with funding. Why do we need to research sex anyway? We all know what sex is and what purpose it serves. What more is there to research?

2.7 Levels of Data Analysis

After collecting data on a research question, researchers analyze the data to test their hypotheses. There are three levels of data analysis: description, correlation, and causation.

2.7a Description

The goal of many sexuality research studies is to describe sexual processes, behaviors, and attitudes, as well as the people who experience them. **Descriptive research** may be qualitative or quantitative. *Qualitative descriptions* of sexuality are verbal narratives that describe details and nuances of sexual phenomena. *Quantitative descriptions* of sexuality are numerical representations of sexual phenomena. Quantitative descriptive data analysis may involve computing the following: mean (average), frequency, mode (the most frequently occurring observation in the data), and median (the middle data point).

Descriptive research
Qualitative or quantitative research that describes sexual processes, behaviors, and attitudes, as well as the people who experience them

2.7b Correlation

Researchers are often interested in the relationships among variables. **Correlation** refers to a relationship among two or more variables. Correlational research may answer such questions as "What factors (such as alcohol/drug use) are associated with contracting a sexually transmitted infection?" Figure 2-2 shows three types of correlations described here.

If a correlation or relationship exists between two variables, a change in one variable is associated with a change in the other. A **positive correlation** exists when both variables change in the same direction. For example, in general, the greater the number of sexual partners a person has, the greater the chance of contracting a sexually transmitted infection. As variable *A* (number of sexual partners) increases, variable *B* (chances of contracting an STI) also increases, revealing a positive correlation between the number of sexual partners and the chance of contracting an STI. Similarly, as the number of sexual partners decreases, the chance of contracting an STI decreases. Notice that in both cases, the variables change in the same direction.

A **negative correlation** exists when two variables change in opposite directions. For example, there is a negative correlation between condom use and the chance of contracting an STI. This means that as condom use increases, the chance of contracting an STI decreases.

Correlation
Statistical index that represents the degree of relationship between two variables

Positive correlation
Relationship between two variables that exists when both variables change in the same direction

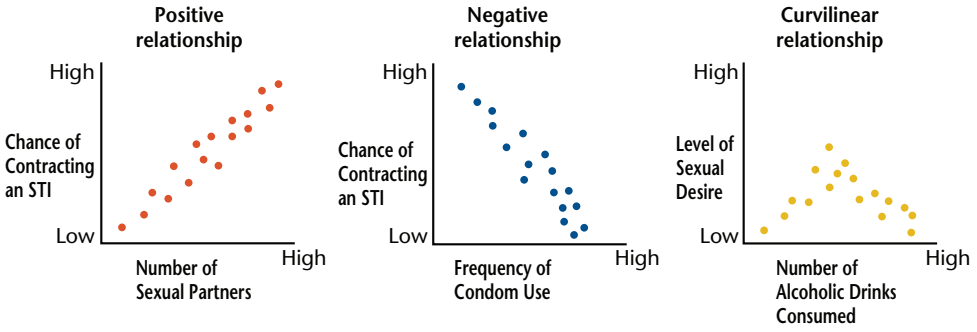
Negative correlation
Relationship between two variables that change in opposite directions

Curvilinear correlation
Relationship that exists when two variables vary in both the same and opposite directions

Students often make the mistake of thinking that if two variables decrease, the correlation is negative. To avoid making this error, remember that in a positive correlation, it does not matter whether the variables increase or decrease, as long as they change in the same direction.

Sometimes the relationship between variables is curvilinear. A **curvilinear correlation** exists when two variables vary in both the same and opposite directions. For example, suppose that if you have one alcoholic beverage, your desire for sex increases. With two drinks, your sexual desire increases more, and three drinks raise your interest even higher. So far there is a positive correlation between alcohol consumption (variable *A*) and sexual desire (variable *B*): As one variable increases, the other also increases. Now suppose that after four drinks, you start feeling sleepy, dizzy, or nauseated, and your interest in sex decreases. After five drinks, you are either vomiting or semiconscious, and sex is of no interest to you. There is now a negative correlation between alcohol consumption and sexual desire: As alcohol consumption increases, sexual interest decreases.

FIGURE 2-2 || Graphs Depicting Positive, Negative, and Curvilinear Relationships



A fourth type of correlation, a **spurious correlation**, is present when two variables appear to be related, but only because they are both related to a third variable. When the third variable is controlled through a statistical method in which a variable is held constant, the apparent relationship between the dependent and independent variables disappear. For example, suppose a researcher finds that the more devout you are, the more likely you are to contract a sexually transmitted infection. How can that be? Is there something about religious fervor that, in and of itself, leads to STIs? The explanation is that devout unmarried individuals are less likely to plan sex; and therefore, when they do have intercourse, they often are not prepared with contraception, such as a condom, or would feel guilty about using one. Therefore, the correlation between devoutness and STIs is spurious. These variables appear to be related only because they are both related to a third variable (in this case, condom use).

2.7c Causation

If data analysis reveals that two variables are correlated, we know only that a change in one variable is associated with a change in the other. We cannot assume, however, that a change in one variable *causes* a change in the other unless our data collection and analysis are specifically designed to assess causation. The research method that best allows us to assess causal relationships is the experimental method.

To demonstrate causality, three conditions must be met. First, the research must demonstrate that variable *A* is correlated with variable *B*. In other words, a change in variable *A* must be associated with a change in variable *B*. Second, the researcher must demonstrate that the presumed cause (variable *A*) occurs or changes prior to the presumed effect (variable *B*). The cause must precede the effect.

For example, suppose a researcher finds that a negative correlation exists between marital conflict and frequency of marital intercourse: As marital conflict increases, frequency of marital intercourse decreases. To demonstrate that marital conflict causes the frequency of marital intercourse to decrease, the researcher must show that the marital conflict preceded the decrease in marital intercourse. Otherwise, they cannot be sure whether marital conflict causes a decrease in marital intercourse or a decrease in marital intercourse causes marital conflict.

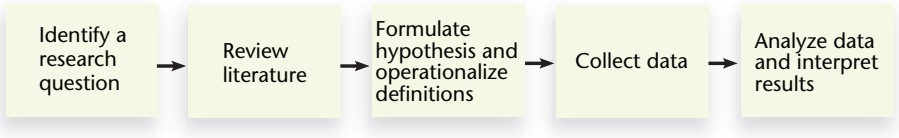
Third, the researcher must demonstrate that the observed correlation is not spurious. A *nonspurious correlation* is a relationship between two variables that cannot be explained by a third variable. This kind of correlation suggests that an inherent causal link exists between the two variables. As we discussed earlier, the correlation between devoutness and sexually transmitted infections is spurious because a third variable—condom use—explains the correlation. Another example of a spurious correlation is the relationship between sexual assault history and current marital status. Suppose a study finds that people with sexual assault history are less likely to be married. While it may seem reasonable to speculate that the previous assault history caused anxiety about being intimate in a marriage relationship, an alternative possibility cannot be ruled out that a third variable—low assertiveness skills, for example—may increase both sexual assault risk and less attractiveness as a potential marriage partner.

Spurious correlation
Pattern that exists when two variables appear to be related but only because they are both related to a third variable

2.8 Interpretation and Discussion

Following analysis of the data, the researcher is in a position to evaluate and interpret the results and their implications. This process may entail qualifying the results, drawing inferences from them, assessing the theoretical implications, and discussing possible applications. Limitations of the data are also identified. Most often these involve a small, nonrandom sample or a sample that is specific to one group (such as college students), where analysis of the data is not generalizable, revealing very little about other groups (e.g., other adults). Finally, the researcher often suggests new ideas, topics, or variables to be explored and examined in future research.

FIGURE 2-3 || Steps Involved in Conducting a Research Project



Chapter Summary

RESEARCH AND THEORY provide ways of discovering and explaining new information about human sexuality. They are the bedrock of sexology as a discipline.

Nature of Sex Research

SCIENTIFIC RESEARCH involves methods of collecting and analyzing empirical evidence or data that can be observed. Scientific knowledge is different from common sense, intuition, tradition, and authority in that it is supported by observable evidence. Theory and empirical data are linked through two forms of reasoning: deductive and inductive.

Interdisciplinary Nature of Sex Research

SEXOLOGY, THE SCIENTIFIC STUDY OF SEXUALITY, is an interdisciplinary field that incorporates various fields, including psychology, medicine, sociology, family studies, public health, social work, therapy, history, and education. Sexology can be divided into three broad approaches: biosexology, psychosexology, and sociosexology. Biosexology is the study of the biological aspects of sexuality, such as the physiological and endocrinological aspects of sexual development and sexual response; the role of evolution and genetics in sexual development; the physiology of reproduction; the development of new contraceptives; and the effects of drugs, medications, disease, and exercise on sexuality.

Psychosexology involves the study of how psychological processes—such as emotions, cognitions, and personality—influence and are influenced by sexual development and behavior. Sociosexology is concerned with the way social and cultural forces influence and are influenced by sexual attitudes, beliefs, and behaviors.

Theories of Sexuality

BIOLOGICAL, PSYCHOLOGICAL, AND SOCIOLOGICAL THEORIES each contribute unique insights to our understanding of various aspects of sexuality. Biological theories include physiological and evolutionary theories. Psychological theories include psychoanalytic, learning and cognitive/affective theories. Sociological theories include symbolic interaction, structural-functional, conflict, feminist, and systems theories.

Eclectic View of Human Sexuality

MANY ASPECTS OF HUMAN SEXUALITY ARE BEST EXPLAINED by using an eclectic theoretical approach that considers biological, psychological, and sociological explanations. For example, for a diabetic man with erection difficulties, physiological explanations would involve pelvic vascular changes attributable to diabetes; psychological explanations would focus on the anxiety that might trigger such difficulty; and sociological explanations would focus on the relationship with his partner and the fact that his family physician may disapprove of his interest in sex "at his age." Biological treatments might involve the diabetic man quitting smoking (to improve vascular circulation). Psychological treatment may involve changing cognition so that an erection is not viewed as essential to sexual pleasure. Sociological treatment may involve changing cultural views regarding sexuality among aging people and incorporating sex therapy into health insurance plans.

Conducting Sex Research: A Step-by-Step Process

UNLIKE CASUAL OBSERVATIONS of sexuality, scientific sex research is conducted according to a systematic process. After identifying a research question, the researcher reviews the literature on the subject, formulates hypotheses, operationalizes research variables, collects data, and analyzes and interprets the results. Researchers are obliged to follow ethical research protocol, which includes informed consent.

Chapter Summary, continued

Methods of Data Collection

EXPERIMENTAL RESEARCH, SURVEY RESEARCH, FIELD RESEARCH, DIRECT LABORATORY OBSERVATION, AND CASE STUDIES, each have advantages and disadvantages. For example, the major strength of the experimental method is that it provides information on causal relationships, showing how one variable affects another. This method's primary weakness is that experiments are often conducted on small samples in artificial laboratory settings, so the findings may not be generalized to other people in natural settings.

Masters and Johnson conducted direct laboratory observation through a one-way mirror to study the sexual response patterns of women and men. One disadvantage of such research is that volunteers who participate in such research are not representative of the larger population.

Levels of Data Analysis

LEVELS OF DATA ANALYSIS include description (qualitative or quantitative), correlation (positive, negative, curvilinear, or spurious), and causation. Determining causation is difficult because human experiences are influenced by so many factors, making it difficult to isolate one factor to assess its effects.

Interpretation and Discussion

FINALLY, FOLLOWING DATA ANALYSIS, the researcher evaluates and interprets the results and their implications. This may entail qualifying the results, drawing inferences from them, assessing the theoretical implications, and discussing possible applications.

Web Links

American Association of Sexuality Educators, Counselors and Therapists
http://www.aasect.org/

The Institute for Advanced Study of Human Sexuality
http://www.iashs.edu/

Journal of Positive Sexuality
http://journalofpositivesexuality.org/volumes/

Kinsey Institute
http://www.indiana.edu/~kinsey/

Kinsey Reporter
http://www.kinseyreporter.org/

Psychological Research on the Net
http://psych.hanover.edu/research/exponnet.html

Sexuality Information and Education Council of the United States
http://www.siecus.org/

The Society for the Scientific Study of Sexuality

http://www.sexscience.org

Widener University: Center for Human Sexuality Studies

http://www.widener.edu/academics/schools/shsp/hss/default.aspx

World Association for Sexual Health

http://www.worldsexology.org/

Key Terms

Biosexology 30
Biosocial framework 31
Case study 48
Classical conditioning 32
Cognitive/affective theory 33
Conflict theory 37
Correlation 50
Critical sexuality studies 28
Curvilinear correlation 50
Deductive research 29
Dependent variable 41
Descriptive research 49
Eclectic view 39
Ego 31
Empirical evidence 28
Evolutionary theory 31
Experimental research 45
Feminist theory 37
Field research 47
Focus group 47
Hypothesis 41
Id 31
Independent variable 41
Inductive research 29
Informed consent 44
Interview survey research 46
Libido 32
Natural selection 31
Negative correlation 50
Nonparticipant observation 47
Operant learning theory 33
Operational definition 41
Operationalize 41
Participant observation 47
Patriarchy 37
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Positive correlation 50
Psychoanalytic theory 31
Psychosexology 30
Punishment 33
Reinforcement 33
Representative sample 46
Sample 46
Sexology 30
Social learning theory 33
Social scripts 36
Sociobiological theory 31
Sociosexology 30
Spurious correlation 51
Structural-functional theory 36
Superego 32
Survey research 46
Symbolic interaction theory 34
Systems theory 37
Theory 30
Variable 41