

Victor Kaptelinin · Bonnie Nardi

# **Activity Theory in HCI**

**Fundamentals and Reflections** 



# <u>Activity Theory In Hci Fundamentals And Reflections</u> Bonnie Nardi

Jeffrey Bardzell, Shaowen Bardzell

#### **Activity Theory In Hci Fundamentals And Reflections Bonnie Nardi:**

**Activity Theory in HCI** Victor Kaptelinin, Bonnie Nardi, 2022-05-31 Activity theory a conceptual framework originally developed by Aleksei Leontiev has its roots in the socio cultural tradition in Russian psychology The foundational concept of the theory is human activity which is understood as purposeful mediated and transformative interaction between human beings and the world Since the early 1990s activity theory has been a visible landmark in the theoretical landscape of Human Computer Interaction HCI Along with some other frameworks such as distributed cognition and phenomenology it established itself as a leading post cognitivist approach in HCI and interaction design In this book we discuss the conceptual foundations of activity theory and its contribution to HCI research After making the case for theory in HCI and briefly discussing the contribution of activity theory to the field Chapter One we introduce the historical roots main ideas and principles of activity theory Chapter Two After that we present in depth analyses of three issues which we consider of special importance to current developments in HCI and interaction design namely agency Chapter Three experience Chapter Four and activity centric computing Chapter Five We conclude the book with reflections on challenges and prospects for further development of activity theory in HCI Chapter Six Table of Contents Introduction Activity theory and the changing face of HCI Basic concepts and principles of activity theory Agency Activity and experience Activity centric computing Activity Activity Theory in HCI Victor Kaptelinin, Bonnie Nardi, 2012 Activity theory a theory and the development of HCI conceptual framework originally developed by Aleksei Leontiev has its roots in the socio cultural tradition in Russian psychology The foundational concept of the theory is human activity which is understood as purposeful mediated and transformative interaction between human beings and the world Since the early 1990s activity theory has been a visible landmark in the theoretical landscape of Human Computer Interaction HCI Along with some other frameworks such as distributed cognition and phenomenology it established itself as a leading post cognitivist approach in HCI and interaction design In this book we discuss the conceptual foundations of activity theory and its contribution to HCI research After making the case for theory in HCI and briefly discussing the contribution of activity theory to the field Chapter One we introduce the historical roots main ideas and principles of activity theory Chapter Two After that we present in depth analyses of three issues which we consider of special importance to current developments in HCI and interaction design namely agency Chapter Three experience Chapter Four and activity centric computing Chapter Five We conclude the book with reflections on challenges and prospects for further development of activity theory in HCI Chapter Six Table of Contents Introduction Activity theory and the changing face of HCI Basic concepts and principles of activity theory Agency Activity and experience Activity centric computing Activity theory and the development of HCI **HCI Theory** Yvonne Rogers, 2012 Theory is the bedrock of many sciences providing a rigorous method to advance knowledge through testing and falsifying hypotheses about observable phenomena To begin with the nascent field of HCI followed the scientific method borrowing

theories from cognitive science to test theories about user performance at the interface But HCI has emerged as an eclectic interdiscipline rather than a well defined science It now covers all aspects of human life from birth to bereavement through all manner of computing from device ecologies to nano technology It comes as no surprise that the role of theory in HCI has also greatly expanded from the early days of scientific testing to include other functions such as describing explaining critiquing and as the basis for generating new designs The book charts the theoretical developments in HCI both past and present reflecting on how they have shaped the field It explores both the rhetoric and the reality how theories have been conceptualized what was promised how they have been used and which has made the most impact in the field and the reasons for this Finally it looks to the future and asks whether theory will continue to have a role and if so what this might be Table of Contents Introduction The Backdrop to HCI Theory The Role and Contribution of Theory in HCI Classical Theories HCI Design Knowledge John Long, Steve Cummaford, Adam Modern Theories Contemporary Theory Discussion Summary Stork, 2022-03-07 This is the first of two books concerned with engineering design principles for Human Computer Interaction Engineering Design Principles HCI EDPs The book presents the background for the companion volume The background is divided into three parts and comprises HCI for EDPs HCI Design Knowledge for EDPs and HCI EDPs A Wav Forward for HCI Design Knowledge The companion volume reports in full the acquisition of initial HCI EDPs in the domains of domestic energy planning and control and business to consumer electronic commerce Long Cummaford and Stork 2022 in press The background includes the disciplinary basis for HCI EDPs a critique of and the challenge for HCI design knowledge in general The latter is categorised into three types for the purposes in hand These are craft artefacts and design practice experience models and methods and principles rules and heuristics HCI EDPs attempt to meet the challenge for HCI design knowledge by increasing the reliability of its fitness for purpose to support HCI design practice. The book proposes instance first class first approaches to the acquisition of HCI EDPs The approaches are instantiated in two case studies summarised here and reported in full in the companion volume The book is for undergraduate students trying to understand the different kinds of HCI design knowledge their varied and associated claims and their potential for application to design practice now and in the future The book also provides grounding for young researchers seeking to develop further HCI EDPs in their own Humanistic HCI Jeffrey Bardzell, Shaowen Bardzell, 2022-05-31 Although it has influenced the field of Human work Computer Interaction HCI since its origins humanistic HCI has come into its own since the early 2000s In that time it has made substantial contributions to HCI theory and methodologies and also had major influence in user experience UX design aesthetic interaction and emancipatory social change oriented approaches to HCI This book reintroduces the humanities to a general HCI readership characterizes its major epistemological and methodological commitments as well as forms of rigor compares the scientific report vs the humanistic essay as research products while offering some practical advice for peer review and focuses on two major topics where humanistic HCI has had particular influence in the field user experience and

aesthetics and emancipatory approaches to computing This book argues for a more inclusive and broad reach for humanistic thought within the interdisciplinary field of HCI and its lively and engaging style will invite readers into that project

Encounters with HCI Pioneers Ben Shneiderman, 2022-05-31 The huge success of personal computing technologies has brought astonishing benefits to individuals families communities businesses and government transforming human life largely for the better These democratizing transformations happened because a small group of researchers saw the opportunities to convert sophisticated computational tools into appealing personal devices offering valued services by way of easy to use interfaces Along the way there were challenges to their agenda of human centered design by 1 traditional computer scientists who were focused on computation rather than people oriented services and 2 those who sought to build anthropomorphic agents or robots based on excessively autonomous scenarios The easy to learn and easy to use interfaces based on direct manipulation became the dominant form of interaction for more than six billion people This book gives my personal history of the intellectual arguments and the key personalities I encountered I believe that the lessons of how the discipline of Human Computer Interaction HCI and the profession of User Experience Design UXD were launched can guide others in forming new disciplines and professions The stories and photos of the 60 HCI pioneers engaged in discussions and presentations capture the human drama of collaboration and competition that invigorated the encounters among these bold creative generous and impassioned individuals Qualitative HCI Research Ann Blandford, Dominic Furniss, Stephann Makri, 2022-05-31 Human Computer Interaction HCI addresses problems of interaction design understanding user needs to inform design delivering novel designs that meet user needs and evaluating new and existing designs to determine their success in meeting user needs Qualitative methods have an essential role to play in this enterprise particularly in understanding user needs and behaviours and evaluating situated use of technology Qualitative methods allow HCI researchers to ask questions where the answers are more complex and interesting than true or false and may also be unexpected In this lecture we draw on the analogy of making a documentary film to discuss important issues in qualitative HCI research historically films were presented as finished products giving the viewer little insight into the production process more recently there has been a trend to go behind the scenes to expose some of the painstaking work that went into creating the final cut Similarly in qualitative research the essential work behind the scenes is rarely discussed There are many how to guides for particular methods but few texts that start with the purpose of a study and then discuss the important details of how to select a suitable method how to adapt it to fit the study context or how to deal with unexpected challenges that arise We address this gap by presenting a repertoire of qualitative techniques for understanding user needs practices and experiences with technology for the purpose of informing design We also discuss practical considerations such as tactics for recruiting participants and ways of getting started when faced with a pile of interview transcripts Our particular focus is on semi structured qualitative studies which occupy a space between ethnography and surveys typically

involving observations interviews and similar methods for data gathering and methods of analysis based on systematic coding of data Just as a documentary team faces challenges that often go unreported when arranging expeditions or interviews and gathering and editing footage within time and budget constraints so the qualitative research team faces challenges in obtaining ethical clearance recruiting participants analysing data choosing how and what to report etc We present illustrative examples drawn from prior experience to bring to life the purpose planning and practical considerations of doing qualitative studies for interaction design We include takeaway checklists for planning conducting reporting and evaluating semi structured qualitative studies Statistics for HCI Alan Dix,2022-05-31 Many people find statistics confusing and perhaps even more confusing given recent publicity about problems with traditional p values and alternative statistical techniques including confidence intervals and Bayesian statistics This book aims to help readers navigate this morass to understand the debates to be able to read and assess other people's statistical reports and make appropriate choices when designing and analysing their own experiments empirical studies and other forms of quantitative data gathering Engineering Design Principles for HCI John Long, Steve Cummaford, Adam Stork, 2022-05-31 This is the second of two books by the authors about engineering design principles for human computer interaction HCI EDPs The books report research that takes an HCI engineering discipline approach to acquiring initial such principles Together they identify best practice HCI design knowledge for acquiring HCI EDPs This book specifically reports two case studies of the acquisition of initial such principles in the domains of domestic energy planning and control and business to consumer electronic commerce The book begins by summarising the earlier volume sufficient for readers to understand the case studies reported in full here The themes concepts and ideas developed in both books concern HCI design knowledge a critique thereof and the related challenge The latter is expressed as the need for HCI design knowledge to increase its fitness for purpose to support HCI design practice more effectively HCI EDPs are proposed here as one response to that challenge and the bookpresents case studies of the acquisition of initial HCI EDPs including an introduction two development cycles and presentation and assessment for each Carry forward of the HCI EDP progress is also identified The book adopts a discipline approach framework for HCI and an HCI engineering discipline framework for HCI EDPs These approaches afford design knowledge that supports specify then implement design practices Acquisition of the initial EDPs apply current best practice design knowledge in the form of specify implement test and iterate design practices This can be used similarly to acquire new HCI EDPs Strategies for developing HCI EDPs are proposed together with conceptions of human computer systems required for conceptualisation and operationalisation of their associated design problems and design solutions This book is primarily for postgraduate students and young researchers wishing to develop further the idea of HCI EDPs and other more reliable HCI design knowledge It is structured to support both the understanding and the operationalisation of HCI EDPs as required for their acquisition their long term potential contribution to HCI design knowledge and their ultimate application to design

making Claims D. Scott McCrickard,2022-05-31 Human centered informatics HCI is a young discipline that is still defining its core components with approaches rooted in engineering science and creative design In the spirit of this book series this book explores HCI as an intersection point for different perspectives of computing and information technology seeking to understand how groups of designers can communicate with an increasingly diverse set of colleagues on a broadening set of problems In so doing this book traces the evolution of claims as a way to capture and share knowledge particularly in comparison to other approaches like patterns and issues Claims can be a centrally important aspect in HCI design efforts either consciously by targeted design techniques or through ingrained habits of experienced designers An examination of claims their uses in design and the possibilities for explicit use in future collaborative design endeavors seeks to inspire their further development use in HCI design Table of Contents What are Claims Knowing and Sharing Evolution of Claims Using Claims Looking Forward

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