

# From “Informatica Umanistica” to Digital Humanities and return

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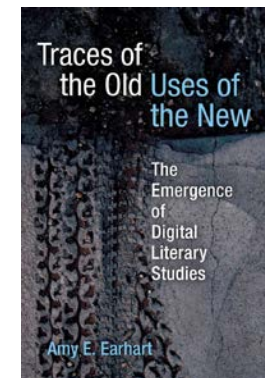
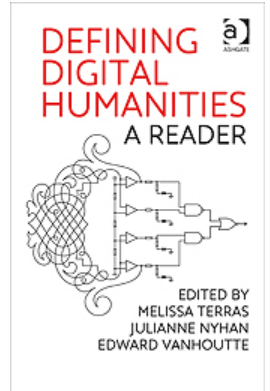
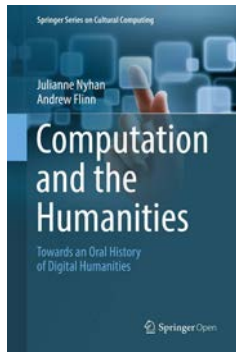
*THE METHODOLOGICAL FOUNDATIONS OF ITALIAN TRADITION IN DIGITAL  
HUMANITIES AND THEIR CONTRIBUTION TO THE EVOLUTION OF THE FIELD*

FABIO CIOTTI - UNIVERSITÀ DI ROMA TOR VERGATA

# The recent debate on the history of DH

The self-reflective stance about its origins and evolution has always been prominent in the DH field. However, in the last 5 years this genre has been particularly popular

- Getting there from here: Remembering the future of digital humanities, W. McCarty DH2013
- The Gates of Hell. History and Definition of Digital | Humanities | Computing, Edward Vanhoutte in the miscellany *Defining Digital Humanities*
- *Computation and the Humanities: Towards an Oral History of Digital Humanities*, Julianne Nyhan and Andrew Flynn
- *Traces of the old, uses of the new: the emergence of digital literary studies*, Amy Earhart



# The recent debate on the history of DH

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One element that unites all these works, notwithstanding the pervasive and convinced appeals to the necessity of adopting a pluralistic, multicultural and global view of DH, is the fact that they are fundamentally centered around the Anglo-American tradition, that appears as the only one to have achieved relevant results both at the theoretical and at the practical and implementation level

# Some criticals views of DH geopolitics

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Toward a Cultural Critique of Digital Humanities, Domenico Fiormonte, Historical Social Research

Digital Humanities and the Geopolitics of Knowledge”, Domenico Fiormonte, Digital Studies / Le champ numérique

“La stratégie du sauna finlandais”, Marin Dacos first published in the author’s Blog (<http://bn.hypotheses.org/11138>) and recently reissued in the Digital Studies / Le champ numérique

# Prehistory, after Busa

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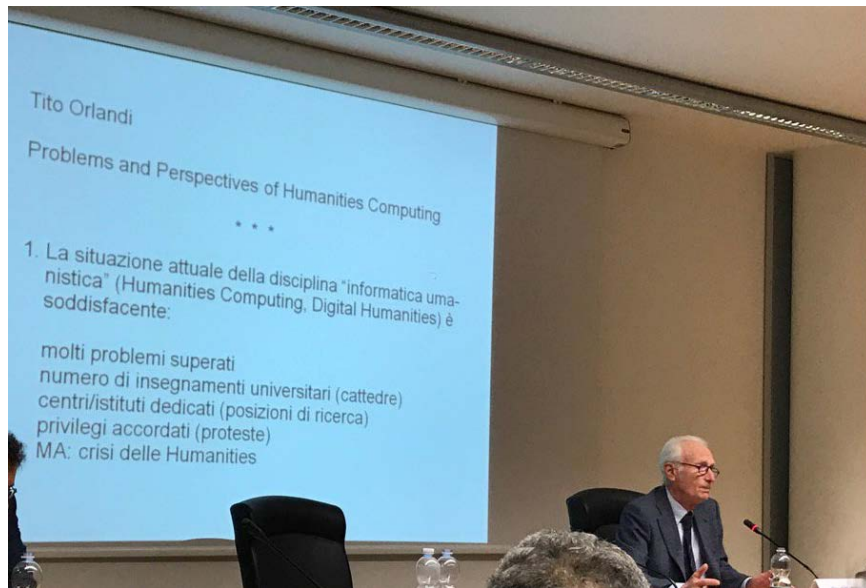
The Italian tradition of Humanistic Informatics has matured and developed for a long time and without solution of continuity

In 1961 the prestigious thematic annual journal “Almanacco Letterario Bompiani” main title was “Le Applicazioni dei Calcolatori Elettronici alle Scienze Morali e alla Letteratura”

[https://issuu.com/p-dpa/docs/almanacco-letterario-bompiani\\_1962/91](https://issuu.com/p-dpa/docs/almanacco-letterario-bompiani_1962/91)



# The foundation of Informatica Umanistica: Tito Orlandi and the “Roman School”



Italian Humanistic Informatics theoretically more relevant and far reaching manifestation it is placed at University of Roma La Sapienza during the 80s of last century

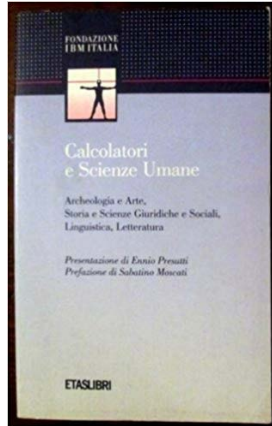
The driving figure of this intellectual path is Professor Tito Orlandi

In 1984 Orlandi establishes the research Group “Informatica e Discipline Umanistiche”, where he gathers a group of scholars that in his own words shared the

“consapevolezza [...] che le procedure informatiche rappresentavano un naturale completamento delle proprie ricerche”

*“consciousness that the computing procedures constituted a **natural** extension of their own research activity”*

# The foundation of Informatica Umanistica: Tito Orlandi and the “Roman School”



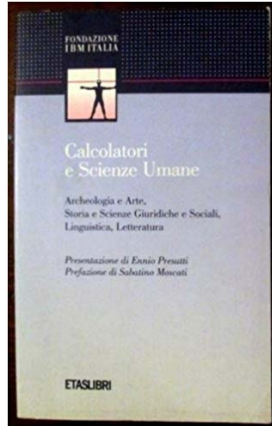
The intellectual specificity of this experience, what constitutes its foundational role for the conceptual history of our field, is the rejection of the instrumentalist vision of computing in the humanities that was at the time the most widespread, if not predominant, in the scholarly debates both at national and international level, and the predilection of a **methodology** and **epistemology** oriented approach.

Humanities fields can adopt computational and informational methods as far as they can translate their traditional objects and methods into their formal corresponding digital objects and processes





# The foundation of Informatica Umanistica: Tito Orlandi and the “Roman School”



Tito Orlandi, «Informatica umanistica: realizzazioni e prospettive», *Calcolatori e Scienze Umane*:

«il rapporto tra informatica e discipline umanistiche si può esprimere nella questione se vi sia un modo “informatico” di vedere (anche) le discipline umanistiche, che si differenzia a seconda delle discipline (e che dunque, in questo caso, rappresentano l'oggetto di questa disciplina), ma che rimane unitario nel modo di considerarle. Il modo informatico prevede la formalizzazione dei dati [...] e la formalizzazione delle procedure per analizzarli e valutarli (algoritmizzazione)»

*«the relationship between informatics and humanities can be expressed as the problem if a computational mode of seeing the humanities exists, that is differentiated according to the specific disciplines but keeps its unity on the way it considers them. The computational mode requires the formalization of the data and the formalization of the procedures adopted to analyze and evaluate them (translation into algorithms)»*





# Orlandi's conceptual underpinnings of humanities computing

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1) The notion of formalization, adopted and adapted from the tradition of logic and meta-mathematics, that is determined by the nature of the abstract computational machines, as shown by Turing :

«Le caratteristiche di queste formule, e dunque del formalismo, mi sembra si possano sintetizzare in quattro punti:

- L'uso di simboli al posto dei contenuti concreti, così come in algebra si usano simboli al posto di numeri.
- La definizione di poche operazioni essenziali per la manipolazione di tali simboli.
- L'assunzione di un piccolo numero di assiomi convenzionali.
- L'uso di simboli per indicare le operazioni sui simboli.

Con ciò si passa da un concetto intuitivo, e da una definizione alquanto vaga di formalizzazione come precisione o rigore, ad un criterio obiettivo per stabilire quando propriamente si possa parlare di formalismo, e dunque anche si arriva a stabilire la correttezza della formalizzazione in sé.»

# Orlandi's conceptual underpinnings of humanities computing

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2) The notion of *model*, that in Orlandi's view is fundamentally the outcome of a phenomenological analysis (in the Husserlian sense) of the object of scrutiny and is the basis of the formalization process:

«Mi sembra che il concetto di modello sia molto importante anche nell'ambito delle discipline umanistiche come base dei procedimenti di formalizzazione, a patto che si mettano in evidenza due componenti essenziali del modello, che in altri ambiti hanno minore importanza, e dunque vengono lasciati come impliciti e non discussi. La prima componente è la necessità di individuare i dati, cioè di identificare precisi elementi singoli della realtà, in una realtà che di per sé si presenta alla coscienza come un flusso continuo di esperienze. La seconda è quella di esprimerli mediante simboli, chiarendo fino in fondo il rapporto fra i simboli e i dati reali»

3) The necessity to build a semiotics of the computational representations of humanistic artifacts, which explains the great importance given to the “encoding problem”, and the criticism to the Text Encoding Initiative, that in Orlandi's view lacked a clear theoretical background

# Giuseppe Gigliozzi's computational criticism

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His early scholarship was deeply rooted in structuralism and semiotics of literature and throughout his research activity he has always tried to build a bridge between that theoretical tradition and the digital literary studies.

His early work was devoted application of Artificial Intelligence methods to the analysis of narrative texts. Moving from the narratological theories of Greimas and Bremond and from the notion of *script* and *semantic primitives* defined by Roger Schank, he developed two applications written in LISP

- SEBNET an expert system capable of analyzing and generating fairy tales, starting from a paradigmatic description of the stereotypical characters and situations and from a story grammar
- SEB a semantic network application to analyze the relations between the characters in more complex narratives, which was applied to study some short stories by Luigi Pirandello

# Giuseppe Gigliozzi's computational criticism

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He, like Orlandi, assumed the concept of model as the epistemological foundation of computational methods in the humanities. His notion of modelling was based on the methodological works of the cyberneticists N. Wiener and A. Rosenblueth and on the notion of isomorphism as defined by D. Hofstadter in his famous book *Gödel, Escher, Bach*:

«Il modello è quindi qualcosa di “più piccolo” del testo [...] Costruire qualcosa di più piccolo significa modificare delle dimensioni, operare una trasformazione, e se vogliamo ottenere, dopo questa trasformazione, uno strumento che risulti minimamente utile dobbiamo costruire un modello che rispetti le leggi dell'*isomorfismo*. Possiamo definire l'*isomorfismo* come una trasformazione che mantiene l'informazione»

He uses a classical work by Marvin Minsky to describe the *operationalizing* role of the model and its intrinsic perspectivism:

«Deve essere quindi possibile compiere degli esperimenti e questi esperimenti devono portare conoscenze nuove, altrimenti il modello sarebbe inutile. Da questo punto di vista, il modello vede amplificata e messa in evidenza la sua caratteristica strumentale, mentre fondamentale diventa il ruolo dell'osservatore. Il modello funziona in quanto struttura sperimentale dotato di un *punto di vista* intrinseco che dona prospettiva alle sue parti. Sarà l'esperimento a portarci le nuove conoscenze»

# Raul Mordenti and digital philology

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His main contributions were in the field of digital philology. In a seminal article entitled *Appunti per una semiotica della trascrizione nella procedura ecdotica computazionale* he gave a semiotic account of the digital transcription of a text moving from the notion of *diasistema* proposed by Segre. In this way he managed to point out the constitutive role of the reader/copyist/editor in the transcription process and to put into question the metaphysical legitimacy of the notion of “original text”, hence changing the statute itself of the critical edition:

- «[...] tale prospettiva comporta, se non ci inganniamo, la necessità di spingere ancora più avanti la distinzione segriana fra “il testo critico come luogo del reale” e “l'apparato come luogo del virtuale”, poiché il cosiddetto apparato interferendo di continuo e in modo sempre diverso nelle diverse letture darà in effetti luogo a *diversi testi critici*. In questa prospettiva l'elemento di invarianza si ridurrebbe dunque non ad uno tra i tanti testi ma quella sorta di *infra-testo* che è il *testo-trascritto*, cioè ad un testo, con l'iniziale decisamente minuscola, quale c'è stato effettivamente materialmente consegnato in un [manoscritto] determinato.»

# Raul Mordenti and digital philology

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His reflection in the following years has been centered on the definition of a digital philology that, moving from the consciousness of the crisis of the traditional foundations of philology, does not necessarily renounce to the central notion of the responsibility of the editor in producing a text that must be a step in the asymptotic approximation to the intentional message of the author:

- «A ben vedere è proprio questa duplice responsabilità che configura [...] la posizione *di mediazione* che caratterizza la figura del filologo (critico ed ermeneuta): il filologo *media* fra il testo e il pubblico, e svolge tale ruolo sulla base di una duplice sua responsabilità deontologica: egli infatti *garantisce* al Lettore che il testo costituito e offerto alla lettura [...] corrisponda effettivamente al testo voluto dall'Autore e alla sua intenzione; e d'altra parte, facendo questo il filologo garantisce anche all'Autore [...] il rispetto del suo messaggio presso il lontano e sconosciuto destinatario.»

# The season of the digital archives and the long path toward the institutional recognition

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Tito Orlandi founded, in 1991, the CISADU (Centro Interdipartimentale di Servizi per l'Automazione nelle Discipline Umanistiche) which was the first proper DH center in Italy, and has concentrated his efforts, among the other, to the problem of the institutional recognition of IU/DH as a discipline

Giuseppe Gigliozzi founded in the the CRILET (Centro Ricerche Informatica e Letteratura) where gathered a group of young researchers (one of thme was me...), which started to digitalize and encode literary texts using formalisms and standards like the Text Encoding Initiative (TEI) SGML/XML based markup language, and to use computational methods for text analysis

Others scholars and schools have devoted their attention to different areas of the field, like thehypertextual studies, fostered in particular in Turin by Mario Ricciardi, who has progressively moved his focus from DH to New Media Studies

Pasquale Stoppelli that starting from the early 90s created LIZ (Letteratura Italiana Zanichelli) a CDROM based corpus of Italian literature texts later extended and made available through the site Biblioteca Italiana

Professor Paolo Mastandrea started his projects of digitalization and on-line publishing of Latin Poetry

In the mediaeval studies is to be mentioned the project ALIM (Archive of the Italian Latinity of the Middle Ages) promoted by Francesco Stella



# From IU to DH: Italians go global!

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With the new millennium, the landscape becomes more and more complex and varied, and today the Italian IU is totally integrated into the global DH scene

The lively and qualified level of the Italian digital scholarship in the humanities is epitomized by the recent establishment of a national scholarly association Associazione Italiana per l'Informatica Umanistica e la Cultura Digitale (AIUCD)

Web site: <http://www.aiucd.it>

AIUCD 2018 Conference: <http://www.aiucd2018.uniba.it/index.html>

Journal *Umanistica Digitale*: <https://umanisticadigitale.unibo.it/index>



# From IU to DH... and return!?

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For a long time the methodological issues have played a foundational role in the scholarly activity at the intersection between computing and humanities. They have been the *principium individuationis* of the field that, in a sense, could aspire to the status of *quasi*-discipline by the way of its common methodological underpinnings.

During the last fifteen years, with the expansive phase initiated with the terminological switch from “Humanities Computing” to “Digital Humanities”, this centrality has failed. It has progressively been superseded by a sociological oriented conception of DH, which has been explicitly theorized by Ray Siemens using the anthropological notion of community of practice:

“[...] the notion of the community of practice here offers us a framework to consider and understand *who* we are via *what* it is we do, *where* we do what we do, and *why* we do it in the way that we do it. What is most unique about this frame is how it focuses us on the set of practices we share, who we share the practices with and where, on what we apply them, and to what end we do so. If we are willing to view ourselves from this perspective, through those practices in our community that make us unique and bring us together in that way, we can readily begin a move toward taking action that is less problematic than larger strategies of definition—a move that clarifies our understanding of the sorts of initiatives we might engage in together, that might bring us together, and the shapes that those sorts of initiatives and endeavors might take.”

# From IU to DH... and return!?

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This is the theoretical justification of a vision of the field that has been labelled “Big Tent DH”, following the influential motto adopted for the DH2011 Conference at Stanford University

I think that if the “inclusive stance” of the “Big Tent DH” has been fruitful in the phase of the expansion, there is now the need for tracing both the internal and external borders of the DH field, borders that are not neat line but fuzzy regions.

My personal favorite metaphor for describing DH is that of a galaxy.

# Digital Humanities as a Fuzzy Galaxy

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- **The Core: Humanities computing/Informatica Umanistica**
  - autonomous meta/trans-discipline, transcending traditional disciplines, focused on theory and methodology and overall infrastructural aspects
- **The Disk: Digital Disciplines**
  - (Inter-)Disciplines which are fundamentally changed through digital media and computational methods (e.g. Computational Linguistics, Digital History, Digital Literary Studies)
- **The Outer Rim: “Trad” Disciplines with D(H) and point of contact with other near scholarly galaxies**
  - (Multi-)Disciplines which incorporate digital methods and tools and consider them a part of their traditional canon and interrelations with LIS, Media studies, Cognitive Sciences, etc.



# The core: Digital Humanities as Method(s)/ology

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Components of the core:

Computational Methods

- They are interesting as long as they can be mapped to relevant theoretical terms/concepts of humanities theories

Formal model(s)/ing and specific data models

- Model is a classical umbrella term... I mean formal (and hence computational) models

General interdisciplinary infrastructures

Critical (in the kantian sense) and theoretical stance:

- a systematic inquiry into the conditions and consequences of a concept, a theory, a method, and an attempt to understand its limitations and validity in the domain of application

# From IU to DH... and return!?

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I am convinced that our Italian tradition of Humanistic Informatics can offer a substantial contribution to define the shape of a core in the DH galaxy, a core that we could call Computational (theory and methodology of the) Humanities, to which I feel to intellectually belong