



CATCH 2020

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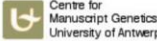
Olga Beloborodova, Wout Dillen, Joshua Schäuble

ACDC | Antwerp Centre for Digital Humanities and Literary Criticism



CMG | Centre for Manuscript Genetics

SAMUEL BECKETT
DIGITAL MANUSCRIPT PROJECT



ABOUT ▾GENETIC EDITIONS ▾NOTEBOOKSBECKETT DIGITAL LIBRARYDOCUMENTATION ▾FREE FEATURES ▾

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WELCOME

The Beckett Digital Manuscript Project is a collaboration between the Centre for Manuscript Genetics (University of Antwerp), the Beckett International Foundation (University of Reading) and the Harry Ransom Humanities Research Center (University of Texas at Austin), with the kind permission of the Estate of Samuel Beckett.

The purpose of the Beckett Digital Manuscript Project is to reunite the manuscripts of Samuel Beckett's works in a digital way, and to facilitate genetic research: the project brings together digital facsimiles of documents that are now preserved in different holding libraries, and adds transcriptions of Beckett's manuscripts, tools for bilingual and genetic version comparison, a search engine, and an analysis of the textual genesis of his works.

FIN DE PARTIE / ENDGAME MODULE ADDED

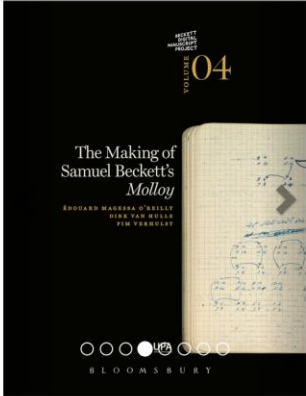
We are delighted to announce the publication of our seventh genetic edition: *Fin de partie / Endgame*. The accompanying monograph on its genesis is available in Belgium through [University Press Antwerp](#), and internationally through [Bloomsbury Academic](#).

EN ATTENDANT GODOT / WAITING FOR GODOT MODULE ADDED

We are delighted to announce the publication of our sixth genetic edition: *En attendant Godot / Waiting for Godot*. The accompanying monograph on its genesis is available in Belgium through [University Press Antwerp](#), and internationally through [Bloomsbury Academic](#).

MALONE MEURT / MALONE DIES MODULE ADDED

We are delighted to announce the publication of our fifth genetic edition: *Malone meurt / Malone Dies*. The accompanying monograph on its genesis is available in Belgium through [University Press Antwerp](#), and internationally through [Bloomsbury Academic](#).



What is CATCH 2020?

Computer Assisted Transcription of Complex Handwriting 2020



Research Foundation
Flanders
Opening new horizons



DARIAH-BE

Computer Assisted \neq Fully
Automated

Why do we not (yet) believe in a fully automated approach?

As (genetic) editors it is our task to
produce accurate transcriptions

and to enrich them with annotations/mark-up

95% accuracy (5% Character Error Rate) is not good enough for editors

(not even 99.9% would be good enough to waive proof reading)

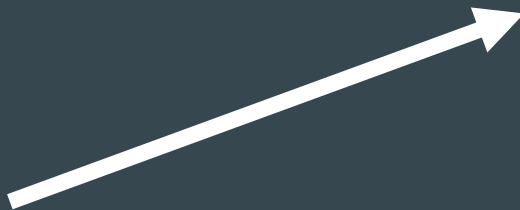
HTR

+ manual proof
reader

VS.

Manual Transcription

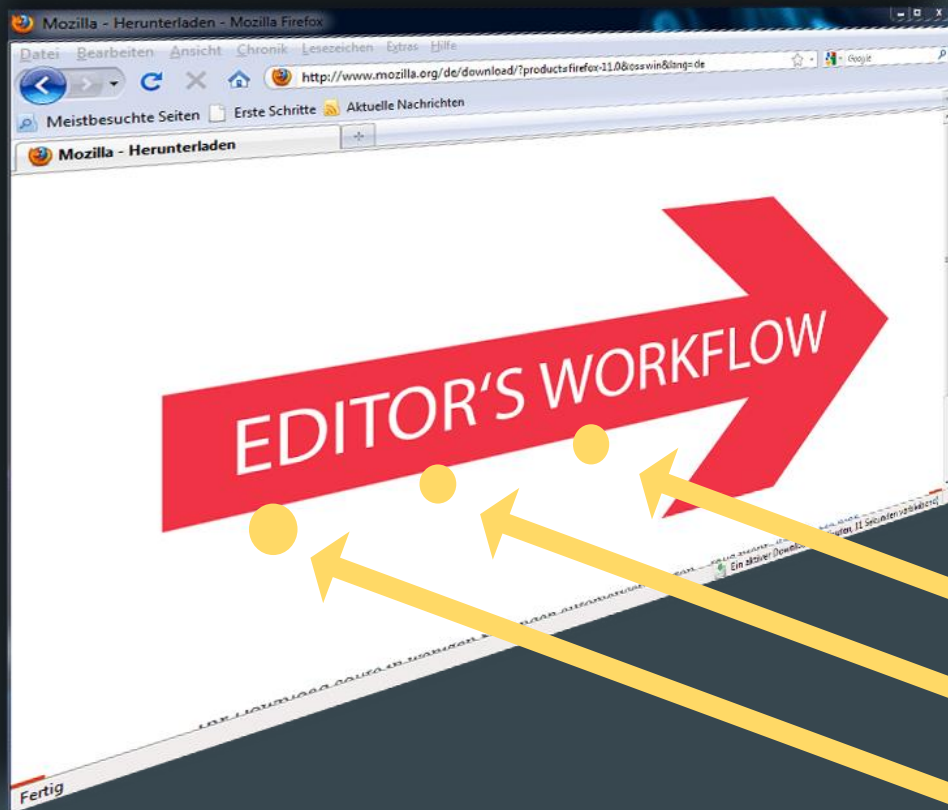
+ Transkribus API
assistance



HIGHLY
ACCURATE
TRANSCRIPT

How can the core functions of Transkribus* best be integrated into the workflows of digital scholarly editors?

*Layout Analysis, HTR, Transcript-Facsimile Mapping



Transkribus API

Linking Revision Campaigns (TEI) & Layout Analysis

We want to capture the “writing order”
(on a macro and micro level)

James Joyce – Drafts for *Ulysses*



A parental rain poured down from
the floodgates of heaven upon the
bared heads of the multitude which
numbered at least five hundred
and fifty thousand. The erudite
prelate who administered the last
confession of religion to the hero martyr
kneelt in a most christian spirit
in a pool of muddy water, his
cassock above his hoary head,
and offered up ~~the~~ prayer of
supplication. Hard by the black
spot the grim figure of the
executioner, his visage being
concealed in a hen gallow pot
in which two round eyeholes
through which his gruesome
eye glared furiously. As he
awaited the final sign he
tested the edge of his horrible
weapon by honing it upon
his bony arm or decapitated
in rapid succession a stack
of skulls which had been
presented to the admiral of A
dreadfully his fell but necessary office.
The now ultra of emotion
was reached when the
blushing bride elect burst
through the piled ranks
of the bystanding and flung
herself upon the ungilded
bosom of him who was
about to die for her sake.
She hung about his neck
and kissed passionately
the different parts of his
which the occasion of
his or gave permission, to
her ardour to reach
the wave to him to the

glorification

37

A parental rain poured down from
 the floodgates of heaven upon the
 bowed heads of the multitude which
 numbered at least five hundred
 and fifty thousand. The erudite
 prelate who administered the last
 confessions of religion to the hero martyr
 knelt in a most christian spirit
 in a pool of muddy water, his
 cassock above his hoary head,
 and offered up ~~ardent~~ prayer of
 supplication. Hard by the black
 spot the grim figure of the
 executioner, his visage being
 concealed in a hen gallow pot
 in which two round eyeholes
 through which his ghastly
 eyes glared furiously. As he
 awaited the final sign he
 tested the edge of his horrible
 weapon by honing it upon
 his bony arm or decapitated
 in rapid succession a stack
 of skulls which had been
 brought to the aid of a
 thousand. His fell but necessary office
 the more the ultra of emotion
 which was reached when the
 in blushing bride elect burst
 through the ranks of the
 of the bystanders and flung
 herself upon the uncalculated
 bosom of him who was
 about to die for her sake.
 She hung about his neck
 and kissed passionately
 the different parts of his
 which the occasion of
 put on garb of penitence
 her ardour to reach
 the word to him to die

From her
 forehead
 a low
 murmur
 of her
 voice
 by the
 her

glomeron
 37

A on a handsome
unobscured
fable was him
were, ~~unobscured~~
the swarthy knight
the various finely
familiar, ~~unobscured~~
a cotta ~~unobscured~~
for the reception
of the color, blind
with the ~~unobscured~~
with just two large
to receive the most
precious blood
the most noble
victim. The horse

Sheward of an ~~unobscured~~
clerk and dog, home
was in attendance
convey these vessels

A parental rain poured down from
the floodgates of heaven upon the
bared heads of the multitude which
numbered at least five hundred
and fifty thousand. The erudite
prelate who administered the last
confession of religion to the hero martyr
kneelt in a most christian spirit
in a pool of muddy water, his
cassock above his hoary head,
and spent up ~~unobscured~~ prayers of
supplication. Hard by the black
spot the grim figure of the
executioner, his visage being
concealed in a hen gallow pot
in which two round eyeholes
through which his gruesome
eye glared furiously. As he
awaited the final sign he
tested the edge of his horrible
weapon by shoving it upon
his bony arm or decapitated
in rapid succession a stack
of skulls which had been
forwarded to the admiral of A
thoroughly his fell but necessary office.
The woman still alive of emotion
was reached when the
in blushing bride elect burst
from her room through the piled ranks
of the bystanding and flew
towards the ~~unobscured~~ upon the uncalculated
bosom of him who was
about to die for her sake.
She hung about his neck
and kissed passionately
the different suitable areas
which the occasion of
her ardent passion, pressed
her ardour to reach
the wound to him to die

glowering

37

From seeing
flooded from
lovely
a long
murder
foully
his
in
by the
her name

~~B~~ Quite an excellent breakfast consisting of ^{breakfast} eggs, fried mushrooms & ^{report} potatoes. The hostess was a very kind & interesting old woman.

~~A~~ On a handsome, well-dressed, middle-aged man, who was being brought in by the central figure of the tragedy, but he expected to find an explanation of it. He was indeed surprised to find that the man was a Frenchman, and that he was a member of the French Legion. He was a very kind and interesting man, and he was very kind to me. He was a very kind and interesting man, and he was very kind to me. He was a very kind and interesting man, and he was very kind to me.

A parental rain poured down from the sky, and the multitude which numbered at least five hundred and fifty thousand, the erudite prelate who administered the last confessions of religion to the hero martyr, in a most christian spirit, in a pool of muddy water, his cassock above his hoary head, and erect up ~~the~~ ^{the} prayer of supplication. Hard by the black spot the grim figure of the executioner, his visage being concealed in a hen gallow pot in which two round eyeholes through which his ghastly eye glared furiously. As he awaited the final sign he tested the edge of his horrible weapon by honing it upon his bony arm or decapitated in rapid succession a stack of skulls which had been brought to the execution office. His feet but weary office, the man still alive of emotion was reached when the blushing bride elect burst forward from among the piled ranks of the by-standers and flung herself upon the ungainly body of him who was about to die for her sake. She hung about his neck and kissed passionately, the different parts of his face which the executioner had not yet reached, and she would to him to die.

glowering
37

From seeing her face, the crowd of the by-standers and flung themselves upon the ungainly body of him who was about to die for her sake. She hung about his neck and kissed passionately, the different parts of his face which the executioner had not yet reached, and she would to him to die.

B Quite an excellent breakfast consisting
 of roshers, eggs, bread, milk, and butter
 and a small amount of jam. The food
 was prepared by a very competent
 person. The consumption of
 the central part of the
 be expected to be
 organs with
 est. It is asserted
 that the most
 be of a certain
 when the
 necessarily
 extricated
 and put
 on a table
 of the
 This report
 when replanted
 to be useful
 in the
 B
 Cuts and
 was in
 cover these
 vessels

A parental rain poured down from
 the heavens upon the
 bare heads of the multitude which
 numbered at least five hundred
 and fifty thousand. The erudite
 prelate who administered the last
 comfort of religion to the hero martyr
 knelt in a most christian spirit
 in a pool of muddy water his
 forehead above his hoary head
 and offered up ardent prayers of
 supplication. Hard by the black
 spot the grim figure of an
 executioner his visage being
 concealed in a hen gallow pot
 in which he was looking through
 through which his ghastly
 eyes glared fearfully. As he
 awaited the fatal sign he
 tested the edge of his horrible
 weapon by running it upon
 his bony arm or decapitation
 in rapid succession a flock
 of sheep which had been
 brought to an assembly of A
 thoughtfully his feet but necessary office.
 The man thus ultra of emotion
 was reached when the
 blushing bride elect burst
 through the piled ranks
 of the bystanding and flung
 herself upon the uncared
 body of him who was
 about to die for her sake.
 She hung about his neck
 and kissed passionately
 the different parts of his
 which the executioner
 had on each part, pressed
 her ardour to reach
 the wound to him to die

B Quite an excellent breakfast consisting of
 of rosters, eggs, bread, milk, and butter
 considerably improved by the addition of
 the consumption of the central part of the
 the expected the organs with
 est fully covered that the milk that
 be of some account when the milk
 necessarily extricated
 important role in the
 of the milk on a table with just two large
 this regard to them to receive the milk
 when replenished to that useful
 B institution
 B Stewart of the house
 was in attendance
 convey these vessels

From being
 forced from
 a long
 made in
 by the
 her name

37

A parental rain poured down from
 the roof of the building upon the
 bare heads of the multitude which
 numbered at least five hundred
 and fifty thousand. The erudite
 prelate who administered the last
 comfort of religion to the hero martyr
 knelt in a most christian spirit
 in a pool of muddy water his
 forehead above his hoary head
 and offered up a fervent prayer of
 supplication. Hard by the block
 stood the grim figure of an
 executioner his visage being
 concealed in a hen gallow pot
 in which he was pouring eye-balls
 through which his ghastly
 eyes glared fearfully. As he
 awaited the fatal sign he
 held the edge of his horrible
 weapon by holding it upon
 his brawny arm or decapitated
 in rapid succession a flock
 of sheep which had been
 brought to the aid of a
 his feet but necessary office.
 The man thus ultra of emotion
 was reached when the
 blushing bride elect burst
 through the piled ranks
 of the by-standers and flung
 herself upon the unclothed
 bosom of him who was
 about to die for her sake.
 She hung about his neck
 and kissed passionately
 an offspring pitiable alas
 which the executioner
 put on garb of penitence
 her ardour to reach
 he went to him to die

Sheward took in. The loose
cuts and dog are always
very in attendance home
convey these results

3

37

Non-stop

From here
toed from
lovely
a town
your
town
the
by the
the name

2

^{breakfast}
 B Quite an excellent breakfast consisting
 of roshers & eggs fried in rumpsteak &
 onions not to be speaking to a bowl

considerably
 being proved by
 the author's
 the consumption of
 the central part
 of the wages but
 he expected
 4
 exclamation
 and it is noted
 that the metal
 be of iron
 when
 necessarily
 extricated
 and it is noted
 of the city
 of this report
 when replenished
 to that useful
 institution

B
 Clats and dog
 was in abundance
 covers these vessels

A
 on a handsome
 unobscured
 noble image
 were
 the sun being
 the various
 lamp
 3
 for the
 of the
 with just
 to receive
 the most
 victim
 of the
 house
 by the
 and

A parental rain poured down from
 the roof of the
 bare heads of the multitude which
 numbered at least five hundred
 and fifty thousand. The erudite
 prelate who administered the last
 comfort of religion to the hero martyr
 knelt in a most christian spirit
 in a pool of muddy water his
 forehead above his hoary head
 and offered up a fervent prayer of
 supplication. Hard by the block
 stood the grim figure of an
 executioner his visage being
 concealed in a hen gallow pot
 in which he was pouring eye-balls
 through which his ghastly
 eyes glared fearfully. As he
 awaited the fatal sign he
 held the edge of his horrible
 weapon by holding it upon
 his bony arm or decapitated
 in rapid succession a flock
 of sheep which had been
 brought to the admiral's office.
 He felt but necessary office.
 He was thus ultra of emotion
 the war was reached when the
 blushing bride elect burst
 through the pearly ranks
 of the myshandry and flew
 herself upon the uncaptured
 bosom of him who was
 about to die for her sake.
 She hung about his neck
 and kissed passionately
 the different parts of his
 which the executioner
 had on each part, used
 her ardour to reach
 he went to him to day

glowering
 37
 2
 From being
 forced from
 the
 a long
 murder
 was
 by the
 her name

Further Examples

Detecting highlighted text

(underlined, deleted, superscripted, overwritten)

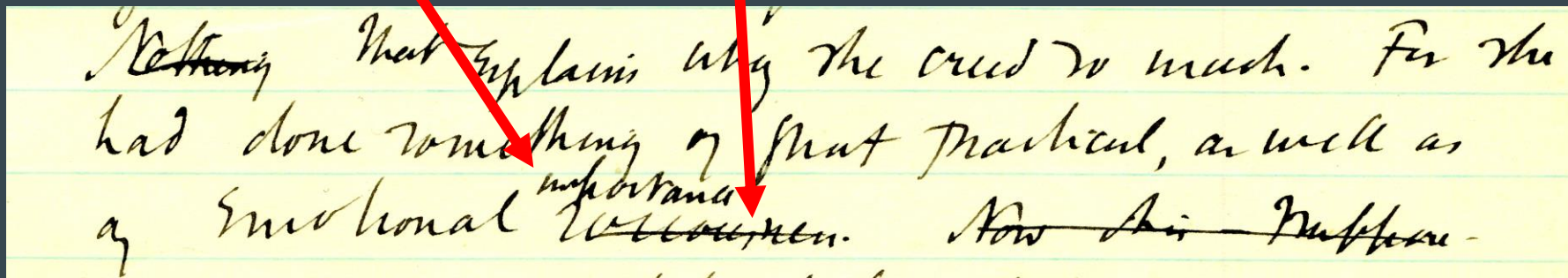
Detecting interlinear additions

Small (10' x 10') miserable barely furnished room (boarded or tiled floor). See sketch. It cannot be his ~~room~~ (he would not keep 4 pairs of eyes and a mirror). It may be supposed that it is his mother's room, which he has not seen for a number of years and is to occupy ~~temporarily~~, ~~the the following morning~~ ^{until she comes out of} ~~that momentarily~~, to look after the pets, ~~the having had to go to hospital~~. This circumstance has no bearing on the film and is not otherwise indicated ^{than by his photo on the wall}. He stands near the ^{with dog in hand} ~~door~~ and takes it in.
Succession of images: dog + cat, sitting side by side, staring at him; mirror; window, ^{dog bing} ~~which~~
~~cat~~ dog + cat staring at him; ~~captured~~ ~~bird~~
and fish, parrot staring at him; dog + cat staring at him. (Pets not disturbed by E. why?)
He sits down ^{apparently a right from side} ~~dog~~ ~~cat~~ ~~to window~~ ~~and~~ ~~draws~~
~~the curtains~~ ~~the curtains~~ ~~the curtains~~ ~~the curtains~~ ~~the curtains~~
Glothes, ~~dog + cat~~ ~~following~~ ~~him~~ ~~with~~ ~~clear~~
eyes. He looks ~~at mirror~~ ~~then~~
Pretend to giving couple animal not affected by E.

Detecting Substitutions

(by combining interlinear additions with deletions
in the following line)

interlinear addition + deletion (close by) = substitution



Nothing That explains why she cried so much. For she
had done something of great practical, as well as
of emotional ^{importance} ~~seriousness~~. Now this is ~~supposed~~

The image shows a handwritten manuscript on lined paper. Two red arrows originate from the text 'interlinear addition + deletion (close by) = substitution' at the top. One arrow points to the word 'importance' which is written above the word 'seriousness' on the third line. The other arrow points to the word 'seriousness' which is crossed out with a red line on the same line.

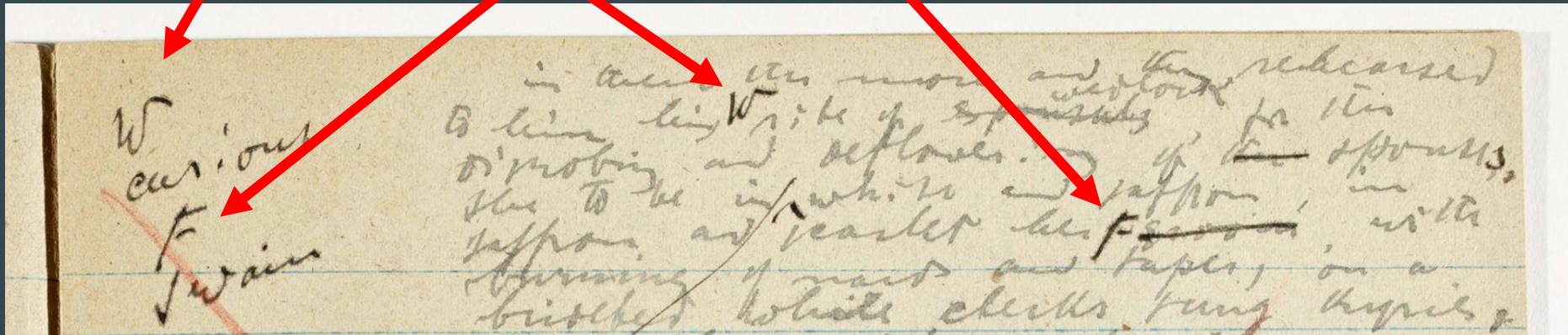
- 11 ~~Nothing~~ That explains why she cried so much. For she
- 12 had done something of great practical, as well as
- 13 of emotional ~~seriousness~~. ^{importance}. Now it is — I suppose —

Genre-based layout detection

Keyword spotting to trace metamarks

metamark

metamark



Version Comparison

(illegible words might be legible on an earlier/later draft)

Version 1

makhuizen ligt in diep water

Version 2

makhuizen ~~van diep water~~

What are your ideas?
(Let's talk about it!)