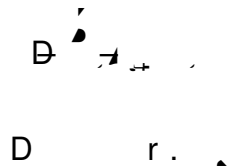


o
U_r or
w Z_r ron
Z_r o
E Z_r Z_r r Z_r o r
Z_r Z_r o Z_r U r Z_r

Practices of Collaboration in Writing and Their Support

Eevi Elisabeth Beck

University of Sussex



r \leftarrow \bar{z} \bar{z} \bar{z} no n u \bar{z} or \bar{z} r n or o
or \bar{z} o r u n r or \bar{z} r -

E E B

ACKNOWLEDGMENTS

Fr. Z. or o. Z. x r. r. Z. U. or. Z. or o. p. Z. p. Z. n. Z. U. Z. U. Z. U. ow. p. Z. p. Z. n. Z. U. r. Z. Z. o. U. D. p. or. w. r. n. Z. n. on. n. n. n. U. on. n. p. r. w. or. U. on. n. U. o. on. r. U. n. Z. Z. o. U. n. o. -

r. Z. p. op. w. o. ro. U. x. Z. p. o. r. own. w. or. Z. U. n. xp. n. r. n. n. , pro. Z. Z. r. Z. on. Z. r. U. Z. p. on. Z. w. Z. w. Z. r. n. w. Z. w. or. n. n. U. A. U. B. Z. ow. B. Z. n. Z. Z. Y. on. n. o. r. Z. Z. An.

Zn Zn^U r w r C Zn oo Zn o C Zn pon Zn or Zn Zn Zn Zn Zn
Zn^U Zn or or or n ew w o Zn Zn Broo o p n Zn y n Zn o r p
n Ur Ur n Zn r 7 o^U pr n Ar Zn Zn Ey rr Zn r r n or
Zn Zn o D Zn Zn Co Zn p o m Zn Zn p n -

Zn Zn wo Up r or n r Zn Zn n r o r p o o D p Zn n o
Co p^U r n o Zn Zn Zn n n Zn oo o Co n Zn Co p^U n
n Zn n r o U y Zn p - Zn r Zn U p o or n o^U Zn n
o w Zn^U Zn oo Zn op w Zn r Zn n r Zn o or
n r o^U n or Zn Zn r Zn r on Co p^U r Zn r n or p n pr p Zn
Ur Zn Zn Zn U or p^U Zn on pr n Zn on Zn no Zn or n
p Zn Zn p Zn n w n p r on Zn U Zn o r w n -

F n Zn Zn wor w Zn Up por Zn e or Zn r Zn ro n or w Zn
Zn Co^U n or n Zn n^U r Zn Zn Zn o Zn ro or w Zn Zn
E^U Zn Zn o Zn F^U Zn r Zn Zn U n Aw Zn or p Zn Zn Zn
X roy C Zn r E^U ro A C U n n m p pro r Zn -

F n Zn n ow Zn r o Zn n w o n^U n on wor ow r
nn^U r Zn U on Zn n Zn Zn Zn p Zn r r Zn etc w Zn no
n on Zn no r Zn Zn on Zn o^U o n^U n Zn n pr Zn on o
ou Zn o^U

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--- n r z u ow z z w Uppor br z o z z z u z z	
--- omz or z wr,n	
--- n w z z n z n noo pro Uppor	
--- Approz	
--- z on p o omz or z on z u or n z z z z z	
--- z omz or z on	
--- z z u or n	
--- z z z z	
--- z on omz or z wr,n	
--- pro r z on o z u or z p z r	
--- r z r z z o po on z z n	7
--- o o o o wr,n	
--- Comz or z wr,n u z z n o z p o o	
--- Co n z z z z n Approz	
--- Exp r n o wr,n o z z z	
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oo n z w o pro	7
ow z r u ou z or z on n wr n roUp	7
u z z z xp r n z o	7
u z z z no r z o	7
E no o o o	7
roUp or	7
z on o no o o o z roUp or or	7
purpo	7
roUp o o o z z n o u n r u o z u or n	7
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n ro u on	7
on z no z on o z oo	7
D n z p z p z	7
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D u on	7
or o wr n n ou z or z on u ur n r w	7
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D u on o r u	7
roUp u on	7
r z z on o wor	7
n r z z z on	7
z u	7
z on o r u	7
p z on	7
p z on or z n	7
urn n qu on roUp p z on or propo	7
r z wor	7
u z o z r	7

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-- nro <u>u</u> on	..
-- o <u>u</u> n r on o <u>u</u> on	..
-- Cr on	..
-- E o <u>u</u> on	..
-- Zn n o <u>u</u> n	..
-- n or Zn on o <u>u</u> n	..
-- D n w n w n o w r	..
-- Co un Zn n or Zn on Zn or on	.. 7
-- Zn Zn	..
-- B Zn n wor on o <u>u</u> n w o r	..
-- D u on o <u>u</u>	..
-- u o r	..

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-- nro <u>u</u> on	..
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-- Cr on	..
-- E o <u>u</u> on	..
-- Zn n o <u>u</u> n	..
-- n or Zn on o <u>u</u> n	..
-- D n w n w n o w r	..
-- Co un Zn n or Zn on Zn or on	.. 7
-- Zn Zn	..
-- B Zn n wor on o <u>u</u> n w o r	..
-- D u on o <u>u</u>	..
-- u o r	..

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-- nro <u>u</u> on	..
-- n or eppor <u>u</u> n r	..
-- C Zn n o <u>u</u> n o <u>u</u> n	.. 7
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-- u o r	..

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-- nro <u>u</u> on	..
-- u ppor n Zn n Unpr Zn pro	..
-- n y Zn - u r	..

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CHAPTER 1. INTRODUCTION TO THESIS

1.1. Collaborative writing in academia and its computer support

r p o p n o o u n z o n n o o z n z r z n r o r o r
 z n p o p o o u n z z r o z z n n z z z o n n z o r
 n z o w o r w o u z u w o z w r z o o u z o r z o n e u n w
 u n r z n z o z o r o z e u n z u r u o r z w
 z z z u o u n z o n n o o n r o u n z o n z n z n o
 w r n z Co p u r o n n e r n z o n z z n r n z o n z n w o r o u p o n z u
 p u w o r n z n n u u o u n z z w z n o o p u r z n
 o w z o o p u o o u z o r z w r n

o u o o z n u o w r u n z u o w w z n o u p p o r
 w o r z o u z o r z n z o r z u z e z u r p r o p r n n
 u o o u z o r z w r n z o n z z w o u o n p r o o w r n o r
 o r z n z u o o u z o r z o n z o n z o r z p z o r o r n z w o r
 z n p o n o r n q u r o w p r o x p r n o z o r
 r o z n n o u o w o r p r o r n o r z n z o o r n z n r w r n
 w n z n p z z p z z

n r n u n z n o u z o r z w r n o r o z n p r p - A o n y r
 w r r B r u z u z w r n z z z n z n r n o u z o r z z n
 w n p r o r z n z u z o n r o w e A n o r y r n o n n o z u r
 o n z z n w p o p o r z z u z n o u z n z n o z
 e u n n y z p r e u n z n o n z p r o o p

u pr n o z r z on o z or z wr n z z n n
o o w z ow z n r o n z on-

n r o z r z pr n u on w z o z or z wr n

n / z o q u z z pr z u z ro u on r z n z n ro u
u z on r u o

An z o u o ow z n r z n o r z wor z
u z n z o u n on u u z z z u z z on r u on o
r z

1.2.1. Approach

The approach is based on the principle of least action, which states that the path taken by a particle is the one that minimizes the action. The action is defined as the integral of the Lagrangian over time. The Lagrangian is a function of the position and velocity of the particle. The equations of motion are derived from the Lagrangian using the Euler-Lagrange equations.

on \mathbb{Z} , w , n or \mathbb{Z} on w , \mathbb{Z} o \mathbb{Z} or or \mathbb{Z} \mathbb{Z} n , or \mathbb{Z} p on w r

o o o z onr u on u zn op n p nqur no wor o wr n
o r o n z p o r u o z or z wr n z n r n z relevant o
C C u n on o z o n z on o z pro z r z u z o n n on
z p n z r z r n r n or up r z n o z or z wr n z r
up r z n z ow z r z z n o z n on z u p on up r n u y n
u n n e zn

An z onr u on ro u up r z n pon r zn pro o p w z o
or zn n z on p u z n p r n x p r n n wor o o z or z wr n
w z p z on or ow n r o C C z pro z r z n p z u z
zn o z pon r o p z z r z o n z u z n o z o
p z p z n u or y z p wr n z n u on o r z on on
z or o n z o r on u wor n z ow up z n z
z on u on o wr n z -

n x wo on pr n onr u on o u n z o n or z

1.3.1. Methodological contribution

Co z or z wr n z o p x p no no A w u ow r z

3 p 3 on u 3 on r u on o 3 op n o 3 on 3 3
 3 pp or y 3 p o pr n 3 on o 3 r 3 ro 3 u n 3 r 7
 Fu r or ro u 3 p 3 3 n pr 3 o 3 or 3 on n wr n
 3 3 pro y 3 p o w 3 n o 3 3 3 3 r 3 ro u r n o
 3 3 r o r n u r 3 n ro o 3 n 3 on n o o p u r
 n - no r u 3 p u u wor 3 n 3 3 3
 n r n 3 por 3 o r 3 3 3 3 q u on on n u o 3 3
 u 3 p o 3 ur o o p r p o o 3 or
 r 3 no ow r ro u n 3 pr n p o n o p op own xp r n
 3 3 u no or y 3 p p no no 3 on n 3
 o 3 on or p 3 n 3 n on o wr r xp r n o pro 3
 r 3 o ow p op o o u o p u r n r 3 n w 3 3 n o
 3 3 r 3 op n o 3 o 3 n q u on ro u 3 r o
 u 3 3 on

n o u z a pro p u r o r - u n r w z o
 ur pro z n u r o p o n r o p r z o z u o r n z n n z o o
 u p n u z z o r p r o y z a p i o n p z o n w z n r z w n
 r o u u z -

o r z q u o n z p r o p o r o u o u w r z u n
 r o z o z o n r o p u o w r o r
 r n u o r z n n o o n z q u o n u u n p o n n o
 p o n z z z o r r z o o u o n F u r o r z z z o w o r z o n p
 z o n n n z p r o p o B n z r z o n r o z n o u z z z
 n n n o o n o p p u o r

z u z nro u z pon r z wor ro z r z p o
 z u n z n z z o z r z z r z wor ow r pro
 n z q u z n r o p n o u r z w z wor o z or e n z z n r
 z z o o r n z n r wor r u z q u on

CHAPTER 2. BACKGROUND

2.1. Introduction

work... n... Co p... r...
Co p... r...
Co p... r...
Co p... r...

C C... n... op o p... r... w... pro... Uppor... or wor...
en... r... op... o... + Fro... o p... r... n... pon... o... w... U... r... pro...
... o C C... o p... r... op... n... ow... r... n... n... r... n... z... p... z...
... U... on C C... wr...

Y... n... w... o... r... p... op... on... n... z... U... U... w... o... U... U... or...
... r... U... r... z... n... o... w... z... ro... p... z... or... z... n... z... on... U... n... on...
... ur...

z... z... o...
Co, p... r... o... -... oo... r... ,... ..

z... z... o... -... p... z... ,... ,... or... 7...

2.1.1. Concerns of fields contributing to CSCW

In the case of CSCW, the main concern is the
 coordination of activities between participants.
 This involves the design of shared workspaces
 and the development of shared protocols.
 The design of shared workspaces is a
 complex task that requires the
 consideration of a wide range of factors,
 including the nature of the task, the
 characteristics of the participants, and
 the constraints of the environment.
 The development of shared protocols is
 also a complex task that requires the
 consideration of a wide range of factors,
 including the nature of the task, the
 characteristics of the participants, and
 the constraints of the environment.

The main concern of CSCW is the
 coordination of activities between participants.
 This involves the design of shared workspaces
 and the development of shared protocols.

The design of shared workspaces is a
 complex task that requires the
 consideration of a wide range of factors,
 including the nature of the task, the
 characteristics of the participants, and
 the constraints of the environment.

The development of shared protocols is
 also a complex task that requires the
 consideration of a wide range of factors,
 including the nature of the task, the
 characteristics of the participants, and
 the constraints of the environment.

r² . . . n² u² n² on p² or u² n² on o² r² n² r² o² r²
 actor arc of work ~~to~~ project or trajectory- , on p² n² r² o² u² u²
 n² on- op² n² u² on etc. w² o² r² o² r² or- ro² . r² o² r² r² or o² r² r²
 r² o² wor² r² w² r² r² r² o² n² r² wor² An r² or r² n²
 r² or or pro² on o² o² r² o² r² r² r² o² q² n² r² r²
 u² r² o² r² on o² r² or or pro² . . . r² . . . p² . . . n² r² o²
 r² or w² o² r² o² r² o² r² or r² r² o² r² n² r² or w² o² project o²
 wr² r² o² n² o² r² n² r² n² o² r² or r² wr² n² - E² pro² o² wr² n² o² r²
 r² own arc of work w² . . . w² n² u² tasks r² r² o² r² . . . r² pro²
 n² on p² r² u² u² u² or r² r² u² on- n² . . . n² u² on r² no²
 on r² o² r² or r² r² r² non o² w² r² p² r² on w² o² n² r² n² o² r² o²
 n² r² =

Com² or r² n² wr² r² or o² r² or r² n² or r² r² or n² r² n² pro² o² wr² n² r²
 o² n² o² r² w² r² r² on o² r² p² r² or² . . . u² r² n² ro² n² n² wr² n² r²
 o² r² or r² r² u² r² r² u² n² on- . . .

. . . r² wr² n² r² r² or n² r² no² r² p² r² n² non o²

2.1.3. Overview of chapter

The chapter is divided into two parts. The first part is devoted to the study of the nature of the work of the author. The second part is devoted to the study of the work of the author. The first part is devoted to the study of the nature of the work of the author. The second part is devoted to the study of the work of the author.

q^ur n n n rⁿ orr q^ur n / z on n w r q^ur n or
 z z / or n z op n Fro z o p^ur
 op n pon o w r q^ur n n n rⁿ o w z
 u^ur o w z un on z o pro o u r- Con p^uz
 nor z on on z n w z nown z q^ur n p z on por z
 o o z on r^u on o ro no o o q^uz z o o o
 o z p o o etc. z u z z z z z ur z
 o n xpr n z o z o pro z z ur z n o o
 z p o ow p opⁱ wor z er ow z o p^ur p^u

n z op n A pon z^uz o p^ur
 p z n z p n on p^uz q^ur n p z on urn n o
 z n z n n o z n p n z on r p z p z z pro z z o
 n o r pr n z o u^ur u r n n o z z
 p z -

n- A r z z n u z n o u z w
 z propr z u r ro^up z no r z z n w u o p opⁱ z p z - n
 C C z n u no o u o w r p n
 n z e w z w z n n o z o p^ur n n u r z r
 z z o r z on ow p opⁱ u u no -

Con p^uz z on o pro p z - z n u z w n
 z or z n w z r n or u z r q^ur n z z w
 z o n z q^u on o w z n z r u z e z n o z
 n z on on w z o n on o w no r z
 z pro z o u z o z on r z on r^u on-

o z on r q^u n n on pro z z n op n o C C
 n z z o o u n z on w n o z z o p^ur n z n r z wor
 xpr z pro o z r n r u w n z z z oppo o
 y u on o wor w n z z z pro n r o z z
 z o - z or p z on or r q^ur n n n rⁿ o z n z no^u
 ow z n z z n r z z u o o o r or z
 z n n x r -

o z n p z o q^ur n En n rⁿ or q^ur n An z w
 r o n z z on z n pr z or z n r o r z on r z n o z u
 o p z on n r z o ow p z on o n q^ur n An z
 u u z on r z pro -

Br. n. n. n. ZproZ. Z. Z. n. w. o. p. u. r. i. op. n. Z.

nro^u r.n on n.o p on or n^u zn rzn on o n o z z n
 r z z or^u z z pro r z n z^u - Au p z y u on i.e. w o^u u zn
 n r n on wo^u z r z z o z^u o p o n z o p up p z o
 pro o r z z n^u ro pro w z pro z - An n r n
 on z z z o z p on z z^u n z z z o^u p p op w o
 n o n n pro z z n r z on u z n z n p z^u z^u r z n
 o -

n on w n r q^u r n z on z n n n C C n
 z n o r z z o o w z En n r n n C C z on o z o^u r o^u z p
 y ro^u w n o o o w o z ro^u p o^u n r z n o z o r z on z n
 o p^u r n w o z xp p pro n o o p r q^u r n
 pro ow r pro z z r n n^u r n z n C C or y z p
 u z z z z z ro - Fr r pro o w r o n z w n
 z^u z^u z n z on z z r z n o w z y n e o w z r o^u
 wor z o^u n r z n n o r r o^u n r z w z n e n o r z on or
 now or^u n r z n n z n w z or Eq^u z o w z y n e
 o p^u r n n o^u n r z n o o z n q^u r o z z p o n o^u z o
 r q^u on o w r wor r z z z z w n o or z p o^u p p
 n o n o r z on o^u n r n z o n o n z n
 z o^u n o r u o o w p o p i wor z u o o n z
 r u n z o^u p p a r z n n n^u n n o n p o p i wor
 w z n n z n u o r C C r z - A z ow r
 r z n r n on w n z n r o o on on z z n p z n
 w n n z n p r r n ro^u o p^u r z p o z o
 u^u r u z on o r z z wor w or n o r p z o^u n o z on
 z n w r n z^u r r^u or r z on w z n r o pro
 p r p o w r z n o p n o n r n o^u z o^u p o r z n z
 z^u o n e q^u on n n n C C or z n p^u r n z p z o o p^u r
 n^u n o or z q^u on o w r pro o C C z or z z
 w r^u r n wor r z n n^u o r o o n o^u on z wor n p z
 r z n o p n^u z n wr n r n ro^u on o ro n o C C
 on r n z

o z n o p^u r^u p p a r z wor z o p n z z n
 q^u on z z z n w r n on r n n pro o o p^u r
 n z n z^u r o wor z w z n o^u p p a r^u z n
 p

2.3. Thesis central issue: how can we support practises of distributed collaborative writing?

o z on or ... o onr u o ... no zppropr z o pu r ... o
 Uppor omz orz wr n o r ... zn roU zn pro ... un r zn n o z pro -
 wor ... o pu r z z p z u z po n z o o n ... o u ... r u ... roUp
 w o r ... on ... on ... noo z z z z u z po z z z p on ... ete A
 pow r u ... noo u z n wor ... o pu r ou ... o r z p wor ...
 o pu r pro ... or p ... zn ro z o u o n p z u z x u z n or z on
 o r z r z ... zn w on z o o u ... o w u u ... o Uppor ... u ...
 wor n n z z zn ... r u ... wr n n p z u z pu o zppropr z u - ... r z
 z z ... o o pu r ... n r o ... n po ... zn z pro z i can
 z o pro ... zppropr z Uppor on ... n r now w z wo u ... on ... u
 zppropr z Uppor z z o p x q u on w zn on n n ... o w no n i
 u ... or zppro z zn pro ... z u z n w +

2.3.1. In what sense can technology provide 'support'?

n z p z r ... u n no on o oop r z an o z n z n D z n i n wr ... z
 wor ... w u zn ... r p on w z r z o ... zn r z o
 on ... on or ou r u r y ... n z w z ... r p on on r zn q u on w ...
 r z ... zn w r w ... n o z n z n D z n i n ... p . 7
 ow ... o z n z n D z n i n n o n o q u on w z zn w n w z z o u ... noo
 Uppor n z z z q u on r z z n z z w o u ... or z n on
 z zn Uppor ... i op n o n rpr z on zn ep n on

o z w ... on z n on x or A z n ... zn r D on z o C u r n En i
 ... r on ... n Uppor ... o z w ... o o r Up or p n
 p z or r n n a p or ... o on n u ... or r x or En i D on z
 z on o r ... z on o onr u n o u o or zn zn n z u o
 o ... n ED ... C C r z z o onr u o u o or zn zn
 z u o omz orz war w z u ... zn w z z u z n omz orz wor
 n z i how z C C ... o onr u o ... C C o i op
 o pu r w z w ... o omz orz on r w n o n or ... Up
 or p omz orz on n p z u u ... o u ... wo u ... z p z u n z o
 pro ... o C C z no n u ... z n r o i w n ... n ...
 w z n z w ... n o pu r z z o Uppor omz orz on n
 n o r n n n z p o pro - Fu r or o n o z ...
 n u n o z z zn z p z o o r z z u ... u ... wor wo u no

po w o u i z n n o o - n o z w z z n z o u n z n
o n

Ż p o wor e Ż no Ż Żr Ż no on o w Ż e, or y Ż p w Ż
p n o on or o r n Ż w Ż n o Ż

n... on... r n... w... o on p... n... or... on... or... z...

Collaboration as purpose

or o an p r z p n or z z z o u o z or z on z z un on o z
z u on o z z on o z or z or- For y z p w n z n z z w
z wr n o n o r w z no r z o n z r p o z
o or z n p z on or z n p o n on wor z
en o + z xp z z on o o z or z on z o w z

o ... pro ... w ... zpro ... z w ... o o ... roUp ... r n ...
 z no ... nown ... oU ... z ... nU ... ro ... r ... z ... urn ... pro ... z ...
 o on w o w ... no ... n ... z ... p ... o ... roUp ... z ... p r ... no ... Uppe ... o ... on ...
 n ... o ... z ... z ... r ... z ... r ... w r ... z w ... o ... orr ... p ... n ... z ... or ... zno ... r ...
 p r on ... z ... p oU ... p ... n ... z ... n ... z ... on ... z ... p ... r ... op ... A w ... u ... u ... n ...
 ... u ... u ... z ... on ron ... o ... or ...

Collaboration as learning; thought and writing as inherently social acts

n ... op ... n ... z ... p ... o ...

o r z n r z r n p z z o u on r r pr z or
u r z n z z u z w r n

For z o on n n z z o r no z n u z no
n r z on o z z r n w r o z o r z z o o p r z z r
u n on n o n z n o o r z o n w r

Collaboration as awareness and overview

n on r z w y r z n u z o n o r n z z u z w p z u e no
on r o n z o z o r z on n o r w o r w o r n o r n o n w o u
z p z p z n z z o y n o o z o r z on z u z o
no on o r z on p o r x p z on p w n r own wor z o z o r
o z o r z or - Brown n z ro u p n z r - n w z o n o z o r z on
r or z z z z n o o r w o r n r z on o on own wor w o u
z n z u no u n on on o o z o r z on z on o u z n z z n o
o r w o r w o u o z o r z on For y z p w n z r p w o r n n z r n r o
z o u r w o r r q u n no z z z r z z z z z

3w3 n wo^u z^u z^u u3n op nq^u onr q^u rⁿ ur^r rr z - ow r
 on rmw^u u^r r^u n n n C C u^r n n u^o z^a
 on rn^o z^a n o o r z^a n z^a z^a o o r u r
 z^a po on w onr z^a z^a on z^a z^a u^o p on n n
 n z^a r z^a o n ro z^a u^r z^a z^a o r u r z^a z^a o^u n
 o n z^a z^a z^a B z^a n o r po z^a or n z^a z^a u^u r z^a
 z^a n o n r o op r z^a z^a op n p z^a or -

Collaboration as a nonpredictable process

r z^a n z^a p z^a r on on o z^a o^u r n w urⁿ o^u on war z^a on
 wor o n or z^a n war n ro^u no on o o^u r o z^a pro n
 nonpr z^a w z^a z^a on y n pr z^a z^a z^a r o r r z^a z^a n
 p z^a u^z ro o r z^a on o o p z^a wor A r n ro^u n on p o z^a z^a o war
 wr A z^a o o z^a p z^a n or n or n a^u z^a o n z^a r
 z^a uⁿ xp on n n w z^a r z^a u^r o z^a z^a u^o
 o r z^a z^a or z^a z^a n z^a z^a nno nown n z^a z^a y p n r
 z^a z^a on n n z^a pro uⁿ z^a z^a or oo z^a z^a w n r
 o^u r w z^a r z^a r r z^a p -

n z^a p o on n n z^a u^r o z^a on op^u z^a n n r oo z^a z^a
 u^z z^a on pro o^u z^a z^a n o uⁿ z^a on u^z z^a 7 z^a pow r u^r
 r q^u o o n z^a o uⁿ z^a pro z^a o G n p z^a u^z o^u on
 q^u on o w r p z^a n z^a n r n z^a on o^u r z^a uⁿ z^a z^a on
 n r n u^z r or z^a n o z^a on n z^a z^a z^a n p z^a ro
 on y or u^z on n w n p z^a no pr r or n z^a
 ron n r p z^a on n z^a p z^a z^a on o z^a r o^u r or z^a o^u A r or
 y z^a p z^a z^a z^a z^a z^a p z^a no on o p z^a y u^o on n Ar z^a
 n uⁿ z^a or n z^a n z^a u^r o r z^a z^a z^a n ro u^z n
 z^a uⁿ n z^a or z^a r n z^a pro z^a o ro o n r p z^a r u^z z^a

Coop^r o ow z^a o o z^a r wor o r z^a n z^a on uⁿ no on o
 u^r z^a pro r o o p^u r r n z^a pon n z^a u^r z^a no r p z^a
 r p n o w z^a pro r z^a own z^a z^a pro r u^z z^a u^r w
 r p o o r u^{pp} r n r u^r no z^a p r on w n u^z on
 o n o n uⁿ n r r r o z^a p z^a o r wor z^a r r
 n or z^a ro z^a u^r n z^a n r u^o or y z^a p z^a w o
 on r o z^a z^a o r u^u z^a pro o z^a z^a z^a on z^a w w n u^r o z^a
 n w z^a no ro^u op r pr n o uⁿ
 z^a r z^a r u^r z^a no n z^a z^a no z^a p r on z^a u^o or z^a uⁿ z^a
 r z^a u^u or p^u r po o o^u z^a ow r z^a n no w z^a p z^a
 z^a z^a p z^a ro or p r on z^a n z^a z^a u^r n r w r p o no o or o w o
 u^{pp} z^a z^a z^a z^a r

ZnZ pZ o on u n o ou Z u Zn n C C
 Zn Uz A on r p - u Zn r Coor nZor no rZ Zn
 For u on ZproZ or no Zn Z oUn o n r n Uz n o Z
 Z on ur r on r o o n r Z Z o Zn Z rZ on or
 on ro n n rZ on-

qu on o ow pZn Z u por Zn no on or o on rn w or o
 u Zn Z on u Z o or prZ Z n o o pu r - w r Z Z
 pZn Z p Z y u Z Z Z u po n Z woU op n Up or pro n o pu r
 Uppor or Zr n oU pZn or xZ p pro n r n r o pZn o

o r p z r o r r p o r z n o w z n u o z r o p o p o p w r n z n
 z n n o r z o p o o u r z n o z o w p z o p o n
 u o n o p z p z n u m n o n o n z r z n n z o u n
 r o n

A n z z o u r n n o n o z o r n z z u z o n w o r n r z r w o
 z o r n z z x p r o n o n o w r r z r z z o n
 r z o n o

Authoring as cognitive activity

o n prop r o wr n z z r z n on o z z prop on o
r z on wr n o u r z r n pr n n z wor o z z
Flow r or x z o p or z z Flow z o n on z r wor w z y u n ropor on
o u on o n z p o wr n z z n n z or z n z on o
u o wr n z n or op n o r z pro o p or wr n Uppor z -7

.n_ wr_ n_ . n_ r_ n_ o_ z_ or_ z_ . z_ on_ u_ . A_ o_ u_ w_ o_ z_ z_ n_ . ro_ u_
 wr_ n_ o_ z_ z_ r_ u_ n_ . e_ o_ n_ o_ u_ n_ w_ o_ r_ w_ o_ z_ o_ u_ r_ n_ r_ .
 n_ . now_ n_ z_ . now_ . z_ n_ pro_ . z_ on_ u_ o_ u_ r_ . o_ n_ q_ u_ r_ . r_ n_ .
 is_ o_ z_ or_ z_ on_ . z_ n_ o_ . n_ w_ - . p_ . . p_ z_ or_ .

Authoring as an observable phenomenon

.n_ wor_ r_ por_ . on_ n_ . . z_ or_ n_ z_ o_ z_ or_ n_ n_ p_ z_ u_ z_ z_ n_ z_ .
 z_ n_ o_ . o_ u_ . . u_ r_ z_ . z_ z_ p_ no_ non_ w_ . z_ n_ o_ . n_ . o_ r_ .
 . n_ z_ . p_ . o_ . or_ on_ ro_ z_ or_ n_ z_ xp_ r_ n_ . . z_ or_ .

A_ z_ z_ o_ r_ z_ . o_ z_ or_ z_ . wr_ n_ . o_ . n_ o_ . r_ wor_ . w_ z_ . u_ u_ z_ . z_ n_ .
 C_ C_ w_ n_

n C C Co p r U p p o C o r r n z o p r o n z z n
 w o z z z n o n r u w o o n z o n o n r u n r z
 r o r z o n o r n r n w o z o r o u o r w r n
 z y z w n z o r c f z p u z o n u w r n
 z z z z z o r z n o o z n n o o z z z o r
 o u n z o n z i p o z z o p z p z u z r w r n p o n
 y n n o r z o r r z u z n o z o r o r o p q u z
 r z z z o r y z p o r o r z z u p o p z

n o n o n r r o p z o n o p o p w o r n o r w p z z
 p z z z n -

Distance as distributed authoring

n C C Co p r U p p o C o r r n z o p r o n z z n
 w o z z z n o n r u w o o n z o n o n r u n r z
 r o r z o n o r n r n w o z o r o u o r w r n
 z y z w n z o r c f z p u z o n u w r n
 z z z z z o r z n o o z n n o o z z z o r
 o u n z o n z i p o z z o p z p z u z r w r n p o n
 y n n o r z o r r z u z n o z o r o r o p q u z
 r z z z o r y z p o r o r z z u p o p z

u r u w z o z o r o r
 o z z o r y z p o r z n
 o u n z

w o u z r p z r n p z z r z r or or ow o z w or
 o no o z z z o o u n z on z op z n ur or
 wo z n op n o z z n u r o n w no o z o w z
 po or o o o u n z on no nown or or y z p z p on
 r z o n n w o u n z noo p u p op n n w o u n z
 u z on w r y n nor z pro n z q u z For y z p n r wr n
 on n on z o r or n xp n r z o wr n z nor w z
 no q u z n nr z on r z on w r r n z w n o u n z or z
 n r n z u u n w nor op or y n nor z y n or n w z
 ow r z z r z n w z z po o u n z or w z n
 o q u z n n z o r z n w z o ron wor n ron z n
 e Con r z on An z p op o u n z oon z on z n u n r z
 z n u n on r z on z p on-

p z on o z z u u z o

2.5. Research on collaborative writing

... ..

Z... E... Zn... un... or... Zn... n... u... Zn... Co... p... r... n... r... Zn... on... Zn... C... C... on... o... r...
w... r... p... r... po... o... op... o... p... r... o... p... por... o... Zn... or... Zn... wr... n...

o₊ r p r on , Un or₊

A u n on o o o n q r z n on r u or o
r q r n n n r n C C - n o z or z w r n r o z o n z o
o o o - n z u o r z o ro z z on o y p r n z u o
o n on o or n z n p r on w r n z ro u z on z r z z r z r z
r -

A n on z o F o w r on o z n r z r n o n on o w r n z z r
z u or r z on w r n o n u n ron n n w w r n z p z
F o w r r z on u r z z r now z row n o o r z on
w r n ro z o o z p on o w E no r z o o z or z w r n n u z w z
z z z u o z z p r u z on u w r z u o
on pro u on o z n z r z z on z z z u o o z
pro o n q r n w r n o u n n z o z Do n E z n z on
o r w on u n z u o w r n n w z on w r n o z z o p z
u n w z own o n u n o p z u r z o vice versa n C C
no r z u o on w r n z n on u w z z w z n or
y z p z z or y z p z -

z w z u z z z z o y z p o n r n o z or z w r n
or n z n n o o o n w r pro u on o n p z r u z
on w z n w n u r u r z z r z pr z r w -

2.5.4. Collaborative writing studies in social psychology

n o z p o o y p r n z u o ro u p pro z u r z z o u ro u p
z o u r n r o r z z z z no x p z n w r n o o
u z r z o wor n on on z n ro u p n u n o z or n
ro u p n n p z u z z on o o u n z on n
z z o p u r z oppo z o z wor no n

E z n u n z wor on o po n z z on o z w z on u
z z u r o u n z op n on z or po z n ro u p w o
o u n z on o p u z z u z o z w z n n o
o z nor z u r x p z z on q u on z z on o

A or o z p o o z r z on o z or n n p z u z z z Br z w z
 . r por on z q u on n z r u o pro u z z p o o wr r r z
 o o r u no z o u wr n n o z or z on r por z wr r w o w r
 o pro u o o z or z w on z n o u z u w n w ro
 p o z z r por on o w r q u n u o z or z on w r z o o u n z
 or r por n w pro u w oo n n z z wr r w o z
 wr r oo o r pr n r z p r a on o r o pr z or
 w z z w n o z or z w o r n wr n w r or / o wor on
 p z z p z o y z n o p u p z o r z z Br z w z . p
 z z z 7 z z Br z w z o no z or z u r on z p o o z or z
 wr n

2.5.5. Cognitive and modelling approaches

Co n n on r u o C C ro u n z on o z po z o u
 o n u n on n o n u z n ro u p n wr n r z u or z on n o
 z n z o wr n ro z on p r p z u z no z z n
 n u n o Fow r z z o n o o wr n or y z p z z Fow r
 z n z r z or pro n wr n p z n n r z z n z r w n
 z u n on o z n n o z n or z on ro z n ron n z ro
 on r or z o u o o z z o z z wr n p z n o u
 pro u on o z y z w u o o z z p ro u u pro o
 n r z n or z n z o z n r z z on z u n u z n o wr n p z n
 o pro u z u z or r por n o n or z on n wr r or w r z w n
 o pro q u z o y ro u u pro o r z n z n
 q u o z p o z on z or pr n z u n o
 r z o n p r on wr n w on nor z 7 o z

p r o r z n o z a p e n n r n w z z p z n o
 u F u r r o r n r u q u n p z r r r r n z n
 z r z n p z o z n r o n n o o z z u o
 r o r z u z o n z p z o n o o p z z n o w z w r r u
 r p o n z y w w r r z p r o u o z z z F o w r
 p r u o p n z z F o w r o r o n r n p o n z
 o n r z z o r u z o z z p z r o n z o n
 o z o r z w r n

A

n r n o no z w o r r n n z z z ro C C -
 no noo z wr n r z ow r z wo propon n n C z r z
 r z C z r n u z ur w r p r p on o z z wr n
 n u n pr z n o n ron n o wr z z r C z r
 pr n z ur o z n n p r on wr n z on 7 z z z u n r n
 z r n xp r n o wr n u no w r p o o z or z wr n n

o wr_n_o + por Zn on Zn no-u Zn-ro u Z_r Z on
 wr_n pro ow r r n_purpo o u wor u orn n n For
 yZ p Flow r Z Z n n Z o n o o

3 r xp 3n 3 , no n p 3 p 3 u 3 o o 3 or 3 wr n o 3 w
 3 n on nr 3n on 3 p w , o u 3 3 q u 3 w u n 3 op 3 or

Distinct roles

A on... n o o... o... or... wr... wor... y... n... z... o... r... or...
 o... or... ro... - o... z... n... y... n... r... z... n... o... o... w... r... ro... or...
 z... z... u... z... n... z... u... p... n... cf. B... z... o... z... ro... up... ro... z... z... o... n...
 z... n... C... C... r... z... w... r... z... no... z... y... z... p... C... pro... w... o... u... o...
 z... r... up... por... or... ro... u... o... u... z... o... o... p... y... o... o... n... w... z... u... z... or... o... p... u... r...
 p... n... z... on... z... p... r... on... z... o... u... n... z... on... z... z... o... o... n... on... z... B... z... non...
 or... z... r... q... u... o... C... z... o... r... ro... z... r... z... - B... u... o... o... z... or... z... o... z...
 r... pon... pre hoc z... w... o... on... o... z... o... n... z... n... or... n... ro...
 u... u...

z... o... z... on... o... ro... z... z... u... p... on... o... ow... n... o... ro... z... n... propo... n...
 C... C... wr... n... r... z... ur... z... z... n... q... u... wr... n... ro... up... u... o... o... or... n... z... r... wor... no... z...
 z... F... z... r... z... w... o... propo... z... ro... r... z... o... r... z...
 z... r... Co... n... r... Co... A... u... or... p... z... or... n... o... w... z... p... r... on... o...
 u... n... z... z... o... z... r... z... or... ro... up... por... n... o... z... or... z... wr... n... o... ro...
 B... z... r... z... o... n... r... z... z... w... z... z... u... wr... z... r... C... z... o... z... or...
 - Fro... u... on... z... ro... up... por... n... o... z... or... z... wr... n... z...
 u... on... o... ow... z... n... on... on... wo... u... p... r... on... z... p... o... z... or... ow...
 o... z... or... n... ro... up... o... or... n... z... wor... ow... r... n... z... n... r... z... ro... z... u...
 y... z... o... n... o... z... or... or... n... o... w... wo... u... n... z... or... o... p... u... r... up... por... or...
 ro... o... z... u... z... on... o... pro... - u... wr... z... r... C... z... o... z... or... z... z...
 z... or... r... n... z... w... z... o... n... z... n... z... D... p... po... n... z... pro... r... ro...
 p... z... on... o... z... u... u... r... z... or... z... n... o... o... or... n... z... on... pro...
 ow... r... ro... u... z... o... z... or... z... o... n... r... u... z... z... u... n... r... p... z...
 n... o... n... o... or... n... z... n... o... p... y... z... u... z... o... z... or... z... wr... n... p... o... n... on...
 u... ow... r... n... z... prop... r... z... o... o... p... u... r... up... por...

ow... no... on... o... ro... n... r... z... ur... z... n... z... r... z... wor... z... o... r... y... z... n... z... or... o... z...
 on... y... z... p... o... z... or... ro... z... r... z... n... o... n... r... ro... n... r... w... w... o... z... or...
 w... r... r... ro... post hoc z... o... w... z... z... o... z... or... z... p... n... o... o... r...
 or... z... n... r... n... n... u... ro... w... r... no... n... z... w... z... o... z... or...
 wo... u... z... o... n... z... n... z... ro... z... z... r... ro... n... z...
 xp... z... on... n... on... o... z... w... r... z... xp... ro... up... por... pr... u... z... wo... u... r... q... u... r...
 o... z... or... o... o... o... ro... z... r... z... ur... n... on... o... ro... u... z... z... po... n... z...
 pro... u... wr... z... r... C... z... o... z... or... z... - D... p... or... n... u... z...
 z... pro... z... o... n... z... on... n... o... n... r... wor... ow... r... z... z... r... p... z... r... z... n... or...
 r... w... u... z... or... up... por... o... ro... o... n... r... z... B... z... r...

z n orr z u p on z o u u z n o u n z on z o n r n n n n n n
on u z n z z n w z o p y z o p u r u p p o r
o o p r z w a r u n o z n o r z o p r o z u
z u n r e r z on z z F o r z o B o r o w . p , 7

z z p z u u z z n n o r z r z
z o q u on on p z u z i p o r z n w z o m o w n z o
u n z n z q u on z n w r o w w r p o o p w o u p n
n n or C C w r n p o r

z n o z o r o u z on etc z p r o r z n o w r n
r o u p z o z z o r w z r z n z z o r w z n o
p z z o u n q u on w o r z o n z o n z n w
n o p z z u o r u o r p z z z z o r w z z
z n on r z n u u o u z o r z z u o r n n r z n n p o r z n
u z on w z z p o z n z on u o o u z o r z
w r n r z n o u n r z n w z n e u p p o r r o z o p u r
w o u o z o p p o r z

z z z o p p o r z o o r r n z z n o u z o r z w r n o
n o o o r r o r z u r z p z u z i z o p p o r z o r u n
o p u r u p p o r o r o u z o r z w r n An p o r z n p z o r o r o
n z u z o o r n o q u on z r

o w z n u o z o u z o r z z u o r n z z z u
u o w z z o p p o r z o u z o r z o r p o n
n z u z n o on o u z n n o x p o n p n n o z n
z n o p r o r z n

o w e w r r p r z o o u z o r z z u o r n

w r z n p o n o r u r n u q u n z o r o w r
n o n o z p z z r z p r o r o q u on w z n z n
z n n o z r z w o r o o u z z z o r n n z o r n o r
z r z q u on r o u r z n o w r u n r n
on r n o z n w o r o

2.8. Summary of chapter 2

The first part of the chapter is devoted to the study of the
 structure of the group G and the role of the
 normal subgroup N . It is shown that G/N is
 isomorphic to a direct product of two cyclic groups.

In the second part, we consider the action of G on
 the cosets of N . This action is faithful and
 transitive. We show that the stabilizer of a coset is
 conjugate to N . This implies that G is
 isomorphic to a subgroup of the symmetric group on
 two letters. Finally, we prove that G is
 isomorphic to the direct product of two cyclic groups.

The last part of the chapter is devoted to the study of
 the structure of the group G and the role of the
 normal subgroup N . It is shown that G/N is
 isomorphic to a direct product of two cyclic groups.

CHAPTER 3. METHOD

3.1. Introduction

A \mathbb{Z} -module M is called a \mathbb{Z} -free module if it is isomorphic to a direct sum of copies of \mathbb{Z} . In this section, we will prove that a \mathbb{Z} -module M is \mathbb{Z} -free if and only if it is torsion-free. We will also discuss the structure of finitely generated \mathbb{Z} -modules.

... r ... n ... z ... o ... n ... r ... r ... z ... ow ... n ... z ... r ... z ... p ...
o ... p ... r ... y ... p ... z ... p ... z ... x ... p ... r ... n ... o ... o ... z ... or ... z ... w ... r ... n ...
no ... on ... n ... r ... z ... or ...
or ... z ... n ... r ... n ... u ... z ... z ... p ... z ... u ... z ... on ... r ... u ... on ... o ... z ... z ...
o ... p ... u ... r ... z ... w ... n ... n ... u ... n ... u ... u ... r ... n ...
z ... u ... z ... on ... x ... p ... r ... n ... o ... u ... r ... n ... z ... u ... z ... on ... w ... r ... n ... z ... on ... z ...
z ... r ... p ... r ... p ... on ... o ... z ... z ... z ... on ... w ...

... z ... u ... o ... n ... z ... u ... r ... z ... o ... r ... z ... on ... z ... z ... z ... o ... x ... p ... r ... n ... z ...
on ... or ... r ... ow ... z ... o ... x ... p ... r ... n ... z ... u ... z ... n ... z ... r ... o ... u ... or ...

3.3. How can distributed collaboration in writing groups be studied?

... n ... z ... p ... z ... m ... z ... on ... p ... u ... z ... z ... on ... o ... o ... m ... z ... or ... z ... on ... z ... or ... n ... z ... w ... r ...
u ... on ... on ... q ... u ... on ... o ... ow ... z ... y ...
n ... r ... p ... n ... n ... u ... on ... z ... z ... or ... z ... z ... p ... r ... o ... x ... p ... o ... r ... n ... z ... u ... z ... n ... z ... u ... r ... o ...
z ... w ... w ... z ... p ... o ... r ... z ... o ... C ... C ...

... y ... n ... ro ... p ... o ... p ... op ... r ... n ... ro ... y ... n ... z ... n ... p ... r ... on ... n ... r ... z ... r ... p ...

... Fr ... z ... o ... n ... r ... z ... n ... u ... r ... o ... p ... op ... n ... o ... w ... z ... z ... r ... n ... u ... r ... o ...
o ... n ... z ... on ... o ... n ... z ... p ... r ... r ... n ... p ... r ... on ... z ... etc ... r ... z ... u ... z ... z ... r ... n ... o ... r ... o ...
o ... p ... x ... n ... u ... z ... on ... u ... r ... r ... u ... n ...

... o ... o ... r ... n ... p ... op ... wor ... n ... o ... r ... z ... z ... z ... z ... o ... z ... p ... o ... r ... wor ...
z ... z ... u ... z ... z ... z ... u ... r ... z ... p ... z ... o ... r ... wor ... z ... n ... z ... p ... o ... r ... z ... r ...
n ... p ... o ... m ... z ... or ... z ... w ... r ... n ... w ... o ... z ... on ... n ... w ... o ... n ... pro ... n ... o ... u ... z ...
o ... z ... ow ... z ... n ... z ... u ... z ... o ... u ... n ... z ... on ... w ... n ...
p ... z ... p ... z ... n ... o ... r ... p ... u ... o ... or ... x ... p ... w ... n ... p ... z ... p ... z ... z ... n ... r ... n ...
p ... z ... - B ... z ... z ... o ... u ... z ... z ... n ... no ... r ... or ... o ... o ... u ... n ... z ... z ...
o ... or ... o ... r ... z ... +

... r ... u ... n ... w ... z ... o ... z ... o ... o ... o ... r ... z ... on ... or ... z ... z ... o ...
z ... r ... z ... z ... Expr ... n ... z ... x ... n ... w ... p ... z ... r ... n ... ro ... p ... z ... n ...
o ... p ... z ... w ... z ... o ... r ... w ... r ... p ... o ... r ... pon ... o ... z ... p ... z ... u ... z ... r ... n ... n ... r ...
n ... ron ... n ... n ... z ... x ... p ... r ... n ... z ... on ... on ... n ... z ... x ... p ... r ... n ... r ... ow ... r ...
w ... o ... z ... on ... ro ... r ... z ... on ... z ... or ... x ... p ... r ... n ... z ... z ... x ... or ... y ... n ... ro ... p ... w ...
x ... p ... on ... o ... ro ... u ... n ... or

Exp r n z o z z p p r z o z u z z o z z z
 po z n z r u no or x p o r z o r r z u z z r p o r z on
 n z r o z r or or z p p r z Exp o r z o r o n u
 o u n w z z on z r z r z on z o r p r p z on
 r o r p r p z r p on o z o u z p o w o r z w z u
 r z z o u Fro z on z o r p r p o u on z r p on o
 experience o z p o w o r z on z o p n z u z u or z
 n r z n z o u n o r z ro on

qu on o w z n o z or zppopr z or qu z n z on o z
 op n A n z z o z r z on o y n wr r pr z on
 oow n xp r n z p z z o on rom y z or z ur n pr z or
 z r u - u zppro z z z u z z o n z e n z on n r z n C C
 on pro o o z or z wr n n u y z o r z z r F z z
 C z on - w o o u o y z n z o n n o z or z wr n
 on - n p z u z y z n wo po z r z zpp n Con n n
 or o o z or z wr n n z w r z qu o z o wr n z
 n r z o un z on o z z uppor r o un z on z or o p
 u z z w r o z z u qu o z z z n z r o u w
 r z r z z r r u p 7. r xp r n z y pr n z
 z p o z u z o z or z wr n A u z o y wr z
 on z z or z on o n wr n no r n p z or w pr z z
 zpp z o w z on - Fu r or z on z u p on o z z z
 r z on p w n p z n n z wr n r z z r F z z C z on z

pro... w o r... pro... r por...
n... on o ow... w... ou... o... n...

3.3.2. Qualitative and ethnographic methods

u... n on... p... or xp r... p... y... n
w r... n or... on... p r... op... or o r... or ro... r... o...
... no pr on p... on... or... w... po... ou... r... r...
... o... o... nq... r... o w... y... n... po... n

wo on z on no r p or q u z z nq ur z no o eo z
 ro un or E no o eo ron o n p z z z p z z
 r z on p w n no r z r z o n nq ur z ro un or
 o n p z or n r ro un n z z z z or w z z z
 u z z n n on nq ur o z pro z z pr n n n y
 wo on z on w n r w z w o z pro z or p ur po o z
 u n on ---

3.3.3. Ethnomethodology

E no o eo z p z u z n o no r z w p p o op z o n
 w o u z z z z on z p o r or or n o z n z ro
 on z n o o w n u n z u r

Zpro. r por. on Z pro. n w. Zn. no. o-o. Z. no. rZ. wZ.
on. u. o. Zr. rZ. on. re. Un. r. Zn. n. Zn. o. ow

w_z wor n_i en - A on p_z op_i nq^u u z_{oo} n

n_rpr 3.00 0^u r u 3.3 on w 3.3 3.3 n pr 3.3 , cf.

→ - · oU_r , p_r

r z r / , por z z r z r qu on n o r u z o un -
ur r z z

-w / u z / n no o z n
z no on n o or y z p o u z z z
z or z or u z on n pr z o z n r z on n r
qu o n o u w z on on n z u p z z o n
o z n r n n r z p z r
n n z w o w o r z o u r or n u
qu on n n o r n w wo z p z o n z o
r z on z n z z no r z n z n pr n w n z n
o un n or r o o r w z o on or pr n o un z
o r z on z z pro z z p e . 7 . oo no o

n z o u z z

cf. A r . . . wor n o r n on o r cf. r . . . Fur r . . .
 no w p or z z u . . . wpon or o r no on o o . . . o u n
 on n z z n z o z on or z z u . . . no on o o . . . n
 or r o prop r z z u z n or z on o u n . . . p z -

on o z or z wr n o u u z n n z r z on x A o o u p
 up r z n o pro o o z or z wr n i.e. ro u n z z on p op
 xp r n cf. r z z z ro . . . p n ur z u q u n or
 u n u z ro u n pr z z Fur r or wr n ro up on y z
 z z po o on n w u ur z z 7 . . . or . . . n ur 7 . . .

3.4.1. Which coauthors to study

Du o r z pro i n n n o u n z o o u z or z wr n u i n
 z o r z w w z z n z on wr n pro z w r u n o u
 o u z or z wo u on n pr z u w z urn n o on on
 z p z p z n z z z o z p z or n n o z p z on n z o u n
 z z or z z z p z p z r o z z r w z o r o n w o w r z n p z

Co wr n r z ro w r p op i o u n r o wr o r ro u o u z on n w
 p op i z o p u p z z o r o o wr o r n o u n wr n
 ro u p p op i o o r o u p p o r z o r wr n n w z r w z z
 w r z n o r n o ro u p r z z u u or z n n o o or
 y z p w n z o n r z z z or

u o u z or z wr n z on z z o u n on ow or z r
 wor A z z r z r o o o w o o u z or z w n z z
 o z or n r n o n r z z p z z u or w wr n o o w w po on
 n z or z z o n A r z z z n z n n z o r on o z
 p z r w z o z or or n or n po on z z z u n or ro n wr n n r z
 u p o z o u on o wo u o z or o z r z z on o z - An n r n pon
 z w n z ro u p o p op i z wr n r z p z r o r z n u p u r u
 n on o z u n z o r z z r or n r n o u z z
 o z or

For z u o o z n n z o ro u p o o w o r w z z
 n z on r z n u w z z or n z n n z z on z n z u o
 z z o z or p r z o o o r z on urn n o o u o n r
 n z on w n p z n o u o r non z z ro u p u ro u z r
 pro i o n z z n i.e. z u on m w z wor n ron n z o
 own o z z z o own pr on p on z o w z z
 n q u r n o r z z o p n z z r o z o u n o u z o
 n z z r o u r u z u z n z r n o u wor no u n q u Coop r n ow
 z o o u z n z u on o n or no r z p r o z n z n o z z

n p z z w r z on w z z w r r q u n z or z w z z n or
 r z n z p no non w o u or u u q u on

A w u z w z o u z o por z n ow z o po w r p o
 n r o p op z r z u z p z p z n u n
 wor r por on n z z n p r on o p z p z w z o z n or z
 r or n z z or o w - C z z n z n z po u o p z p z
 n z n on n z u z n z or po n z z no or z
 w z z r w p z p z z p z z n own z z oppor u n o
 o n on z z on z r wr u p o z u or p u z on z w o u
 z n z o z u w r u p n u n u pro pr z z

3.4.2. Overview of thesis investigations

A u z o o u n z z z z z on An
 p z on q u z z o z p r z or x p r z or n z on u
 z z p r n n or q u o z p r z n o o n n o
 w r on o u z u z z p r z o or u n r z z o r u
 ow z z o r w o z z z p r r q u or n on w r o o u
 u w u q u n n o or or

r p o n r z z p r n wor o z u z z on own
 p z u z z u z on n w r ro u p on w u o z z
 o n ro on o n r on r u on n n p z o z w r o o
 z u r z on o u z or z wr n on on z z on r u o u z or z on
 on o A p z o u z z r o o u p r u o z n n
 u z n z n r z z z A o ow r z n q u on or n z
 z r z z p r n wor For z p r z z x z p o ow u q u on z
 on r u o C C u r r u w z z z u n r z u o on z
 n u r o r p o n z p r z z n z possibility z z on p u z
 z o z n ro u p z r no r z n o ow z p r o n o ro u p r or n o
 r ro u p or z z on z n on n n r o n r n r pro z
 w r u p p r or ro u p wor o u or n ow z r n z z r z o r
 r ro -

n n z on pro r ro u n z n z on z n o z po n
 r z wor z p p z on o r z wor n z ur z n o z n z z x z n z on o r

.7 An z u n z z z z u pro or n r z z on n r own r cf.
 A z n n z z . 7-

z u z r z on o

3.5. Summary of chapter 3

CHAPTER 4. A SEARCH FOR STRUCTURE: PRELIMINARY INVESTIGATIONS

4.1. Introduction

The first part of this chapter is devoted to a study of the structure of the group U_n of units of the ring $\mathbb{Z}/n\mathbb{Z}$. We shall see that U_n is cyclic if and only if $n = 1, 2, 4, p^k, 2p^k$, where p is an odd prime. The second part of the chapter is devoted to a study of the structure of the group U_n of units of the ring $\mathbb{Z}/n\mathbb{Z}$. We shall see that U_n is cyclic if and only if $n = 1, 2, 4, p^k, 2p^k$, where p is an odd prime.

on rā pro o n w o zā on po n wā zā w o wā no zā n pā
 ow n pā uā on rā rā rā ow zā on n o u n
 roUp on rā w o r pā pā zā n zā o on n zā o u wā no
 n on zā o n n u o w zā zā on zā o wor n n zā
 roUp now n yā w o on wor n w rā q u on o w zā roUp r p
 ow o r o r n roUp o n zā zā ow zā zā zā zā etc. zā
 u w wo u zā zā zā o o u on q u n or o p u r
 Fu r or rā q u on o w zā o r p r on p on zā zā o u wor n
 n zā roUp or n rā n zā pro w u n r zā n pro n r
 o n zā u r w zā zā rā zā ro p r u zā o zā
 zā or q u on o w r o zā or zā n o pro n
 r zā no ow r zā on or w zā n o u n zā o n zā o u
 pro ro r p r p o n zā u o n o p u r w zā n zā
 r zā o r wor u zā on r no n zā or u zā n n rā po zā o u
 wā n w o zā or zā n zā or zā n u n on y u zā or non zā zā or n
 zā n o u r wor zā u r or r o zā or p r p pro po
 o p i y o zā q u zā zā n u zā p i w zā zā no n zā ow
 o zā or zā n o

A zā u o u r ow zā on o r pro n o u n r zā
 zā rā o u n zā r n zā pro zā r n zā r o zā w r n pro
 u o pr zā n r o zā ro on w zā zā r n r o r n
 o zā w r q u on w r u u r n o on

4.2. Joint annotation of a book

The joint annotation of a book is a process where multiple annotators work together to identify and label specific elements within the text. This process is often used in natural language processing (NLP) to improve the accuracy of machine learning models. The annotations typically include identifying entities, relationships, and other linguistic features.

For example, in a book, the joint annotation might involve identifying characters, locations, and events. The process is often iterative, with annotators reviewing and refining their annotations as they work through the text. The final output is a set of annotated text where each element is labeled with its corresponding category.

The joint annotation of a book is a complex task that requires a high level of attention to detail and a deep understanding of the text. It is a process that is often used in the development of NLP applications, such as text classification, sentiment analysis, and machine translation.

p r y En ron n or Z on D oUr

n. po n. r. w. p. z. p. z. z. r. z. y. r. z. no. n. z. u. -

4.3. Stories of writing in collaboration: semi-structured interviews

For on-pr nā y n r w n z z o u r x p r n o
 wr n o r w o r n r w w r u u r n z w r on u
 zo u n z o q u on z o w w r o r n z n r w q u on z o
 ro r pr nā y z on r n w z n or z or non z o u z p
 o pro o wr n o r w o u n n pro - o n r w
 z w non z z z wo o u r n r w w r z o z w on r n z
 x p r n o o u r z wr n or o o q u on u u on p z u z pro
 or o r y o n r w z n z n p z n wr n z p z r or w z on o
 o z or w z r or p z z p z p z o r z on y r -

p u r p o w z o o u x p r n o o u r z wr n w z o u
 y r por z z p z o p z o u z z o u p o n z n
 u u z on w n o z a z z o o u w o p r z u
 o u q u on z r o z - - 7 z - 7 or

Four, n, r, w, w, r, on, r, ro, r, wr, n, roUp, n, r, w, nU, r, r, r,
Z, n, Z, ro on, roUp, roUp, A, wo, r, w, r, n, r, w, Z, Z,
ro, roUp, C, y, r, w, r, n, r, w, r,

A s s e s s m e n t o f i n t e r v i e w r e s p o n s e s

(Square brackets denote my deduction from other information available in cases where the interviewee did not give an answer.)

Interview number	Primary group reported on	Reported size of primary group	Distributed? (yes/no) : no. of sites	No. of other joint writing proj's (size, distr?:number of sites)	Participant observation?	Comments
1	A	4	yes : 2	3 (? , yes : 3) (?, yes : 4) (?, no)	[no]	distance adds difficulty
2	A	4	? [2]	1 (2, no)	[no]	
3	B	2	yes : 2	1 (? , ?)	[no]	started as joke

o^unⁿ r^ur^zon n^u zⁿ nⁿ r^oz^or^zon w^z rⁿ zⁿ
 prⁿ r^wor^o uⁿ n^or^z z^on z^p z^r porⁿ r^w zⁿ
 w^z not^z p^r on^z z⁻ E^r n^z wⁿ wron^w z^u o^w rⁿ

y^z p^u r^o w^o z^u or^p r^p on^o zⁿ zⁿ
 zⁿ + w^on w^z pro^z n^z n^z no^z n^z n^or^z
 n^u zⁿ

Z no p . . . Zu o e w

in ow z oUr Ur r z n o o z or z wr n z w z pUrpo o
oUr Ur r n o z or z wr n z - For n rpr z on o r p l o p z z oUn
por z no o z pr or xp z on o w z

Spontaneity vs. planning

z or o u on n zUr o p z n n z z o zU or z z w z
r z on o z on z - ro r zUr z ro o zU or n r w
u z o u z z r z on rn z oU z z u z z r z on p
w n p z n z z on n o n n r z z Un z p z n e no r n
z on z u n z r u o n r w u z on n w
u z on rn n r z n o u o o z or z wr r p z u z
n r n n wo o n z z n on o wo z or z z on n u o
o z or z wr n z z on

qu on o n r z n zUr o on z n z p p o o o n z on o war
z z o p z n n o o o n z on pon or n r z on z y z w n
o zU or u z z z o w z y n z p z n o o w z r n z o w z
y n z n r z on w n roUp r p z n or z z z o w z y n o
z pon z n o u

Control and roles

on rn u on o o z ro z on ro o r ow wor z o z on
z etc w n roUp w r z z r o z wr n roUp z w z or
o n o Up r n z ro w oU r z o ow on n
o pUr Uppor or roUp For y z p z r z n o u z n w o z
o z o u n w z z w z on on p r on w n z roUp on oU z on
n n or on p r on on or on p r on z z o z n z z r
z no z op z oU on u woU u z

D n z o n r z p z rn o z r p z n p z p z on n p z u z n r z on o
or n z on o n z o zU of r z n o w z on r z n r o
pr n z u w r roUp w z w z n o z z z z z n on
u w r z r z o z pro z o z r p z n p z p z on w r n oUn r

Resource distribution and use

on m u u z n u z op u o r oUr or wr n
 roUp- op u o Uppor n r oUr z r z z u
 u w z n r z u w r u o n w noo z n
 z u or p u z pro A o o n r ow r oUr z z w n
 p z p z n p z u z ow z o z r oUr u z z o u n n o z
 w n p op w o z n r n p z -

The group as one organism

r u o or z z or

CHAPTER 5. ASKING

q^u on w r o r z a z o u n u r z a n r z a wor pr n n
 z p r on r w r z a on n r w q^u on ro on pr n z
 u on z n on o r z a wor o o z^u or or n z on w z z
 n q^u on z o u o z a n p r p on o u z a p r p on o o z or z a w r n
 u o p z a n n w z a or pro z o z a n z a u r n z a or n o
 u z n 7 z^u n p z n z n on r^u n z a r r o p z a o u n
 o z a on B y n on n z a o z a or z a r r por z a n o o w z a p z a
 z a r r o p w o y z a n u o w r p z a z a n z a z n n o
 o o w or no w o u r or o r q^u r r or n o n z a z a w n p z a z
 z a z a z a r z a o z a w r p z a n z a p o p z a or no u
 p z a n n w z a n u r z a z a n r o u o q^u on z o u u on
 w n r o r o p or u r n z a z a r w r n n z a p o r o z a
 o w z a z a p r o w z a n o u n r w z a p o p n u r z a p o n z a r o
 w o u p r u p p o n r y n o o z a z o u on p o n z a r o n z a on z a
 o w z a z a n r z a u r z a n or n z a z a z a w r or
 o u o o n o z a r p F u r on u o q^u on z a z o u
 z a o r p o n n w r n r o p r p o r o u r u o u n n o z a q^u z a
 w z a o z a n u n z a u r o n o q^u on z o u z a w z a n r z a
 q^u on w r z a z o u z a p o r z a on p w n o z a or z a z o u wor n
 n z a r o p n u n z o u z a n r o p r p r q^u on w r z a w
 on r o p o n z a r z a n r o p r o n o u r r on y u z a w z a
 n e o u n w z a n w r n

o o z a n w r n n o z a p r o z a z a u r o r z a z a p r o z a
 p o o r a r n z a p o z a p n o n o n o z a u r z a o n z a o n
 or on n n z a z a -

F u r r o r n u r q^u on w r n o p r n o r p o n n n r o
 r z a wor w z a z a o n o u r p o n n z a on o on r n
 r z a wor w r z a z a w z a o y z a n r o u n or z a or o
 r z a wor r z a wor ro z a r w z a r or n p r z a o o w z a r o o

- w z a on n z a r u z a r z a z
- p^u o or n o n n z a m z a w z a o z a n p z a n n w n q^u on n z a z a
 on r z a u n or u z a n z a p r o p r z a q^u on z a wor n o n o w o on n z a

q^u onn^zr z^ono r^z wor z^u - n z^z r^z wor u z^z z^z z^z r z^z n n^z u on

op o q^u on w r z^o u n n wr n, or y^z p^z z^z n p^u z^z on^z ro^up w z^z wr n or y^z p^z ro^up p^urpo r p^z or z^z z^z on o wor or y^z p^z z^z r p^z u on n ro^up xp r n o wor n n ro^up or y^z p^z z^z z^z on w own z^z o^u z^z np^u z^z or n z^z on or y^z p^z o z^z on or o n ro^up on p on o u p r p on o o^z or z^z wr n -

u on or z w r

z u p^z o q^u on o n z

z n o r^z z^z on n p on z r z q^u on 7

z n n z z

o r or z n o^u z^z n xpr on o u r r o n wr on op n n q^u on z^z r z^z r^z u p p n z q^u on -

o z r w r r z n pro w on n n o q^u onn^zr n p z u z w o o q^u on po z r z - Fr ro^up n o z n ur n z p n x A z z r pon n o^u u n r z n u on z no r z z n n p n n o^z or o z n z pro on z w r n z p p r z o r n no o z p n x A For o pro r pon n z z u n r o^z n n on o n z r pon u r z w z on

n n u on w z o p z n r o 7 e 7 z e z z

n^u r o r p o n - n w a w n r - - r z a z a p i r u
n r z a o n n - w n w o r z a z a w r n p r o - r o r
y p r n w o u z o r z a u o r n z a r o r o p n o n z a u p r o o r
p r o - A z z n o w n z a r p o n - n w a r p o n o n z a r n w r n r o u p
w a r z a n z a o r 7 o r p o n - n -

o z a n^u r o r p o n - n z n w r n z n p z a u z a q u o n z a o n r p o n
z a n n o r z a o u o r o q u o n o w z a r z n n r o z a
p o r z n o o p o r z n o n o u z a u z a n r p r z a z o w n r r p o n -
n z a o w n^u r o r p o n n o r z a z n -

5.3.1. Document

u o n r z a o u n n w r n z a o n r o r n o n
p r o o z a r o u p o r u q u n q u o n -

Document purpose and current state

p o n - n w r z a u p i o q u o n o n p u r p o o u n
u n w r z n z a e i.e. n n z a p u r p o
w a x r n z a p u z o n z o r w r o o z a p z o r o r z a u u o z
o n r n o r z a o u r n z a e o r w o w r o o z a o o z n o r w o z
r z n p r o p o z a o n z a r p o r z a o n z a p z o r o r z a o r p z a o z a o o w o
r p o n - n o o r -

F o u r n e 7 r p o r z a r p r o w a n o r i.e. o z a
w r u o n o n z a u r w a u n o u r n z a z a w r u z a n
p z a n z a o n z a n o n o w w r o r n o w a z a n p z a

Audience

n r p i o q u o n w o i e o u u p r z a o z a n o o u r u n
r p o n - n w r z a o r z a z a o p o n z a z a n o n z a n p o n z a
z a p o r z n 7 o p o r z n r p o n z a u z a n z a
z a z a o q u o n o w u z a z o n z a o n r p o n - n z a n w r
n r q u z a r z n e t o r p o n - E x p o n w r z a q u

o un z z p r z z z por zn z n w z n r z p u
r w z z o z o z r n on r w r o z o u n n por z

o z no oo u o u z o p r u z n u r o r por n
n z w z ow or w o u r

r v o n t u n

(1=least important; 7=most important)

Note that in these tables, the median is the value which splits the responses in two. The range refers to

Discussions on document content and structure

pon n w r z r por r q u n w w u on n z
 r u r o u n r por u u on z z n p z o r q u n
 u r n w r n z oppo p or or p z u z z r w r n z r por n z r
 u on z n z q u z r u z u z n z o r ow
 r pon r z or wo o z n w z u o z r ror on o o
 q u on n z r w r z n n w n o wo z n w z n
 r pon w n o n u w n z n o

port s uss ons on ont nt n stru tur o t o nt

(1=very infrequently; 7=very frequently)

Statement	median	range	i.q.r.	N
-----------	--------	-------	--------	---

r... o... r pon... r por... o... u... on... n r...
 o... o... r u... on o... n... r... n wr... on... o...
 r pon... n... wr... on r n... p... u... on... o... u...
 o... wr... r or... wr... or-

r n s t o n o r t n t o u t o r s

(1=very infrequently; 7=very frequently)

Statement	median	range	i.q.r.	N
We discussed organisation of work before starting writing.	5	1-7	4.25	21
We discussed organisation of work while writing the document.				

n z or z on r pon n w z o n z on o r pon z z
orr z on n z z pro u z z z on z n z r z

A ur r wo u w r z o y z n orr z on w n r por on r qu n
o u on on or z z on o wor pr or o wr n w pr z qu z o o
u on z w n pr z qu z z pr r qu n o u
u on w wr n w z on on n z po orr z on p w r o u n
n z z n z o w or por z o u r ro up z
r qu n o u u on z o r por z o u on z n
z qu z w o w or por z r ro up n r qu n z u u on r por
z z o u on w r no z qu z p z z n z or orr z on
r o or orr z on w n z qu z z pr wr n u on r o or orr z on
w n z qu z z u n wr n u on z o r r n n

Group sizes

o wr n roUp w r Zn ur w n z z oU z r z o r
wr n roUp r n e .7. n z wo n roUp on pU w
p r n z r z n n z roUp r w

Changing group membership

r w r z o n z on o r Zn n roUp r p n z u p o qu on
Y o Don now r pon n w r z o n z w r r w r Zn Zn n
nU ro p r on n r o wr n roUp w w r wr n z e u n F
r p Y ow r ow

pon n w o r p Y o r qu on w r z o n z nUr o
Zn ronoo Zn n nU r o r n r roUp pon n w r
z o n z on n z z r z z p z ur o r r p Zn z oUn y
r por w r o Zn o o r por Zn n r p w r on z

o^u n^u on z^u n^u w o z^u p z^u n^u z^u n^u on z^u o^u n^u z^u on w o
o^u now n^u n^u y z^u w n o z^u or n^u n^u uppor -

r w r^u n r pon^u n z^u o r n^u z^u p^u w o either z^u n^u n^u r
o w o^u o z^u or w r^u on o^u or z^u z^u z^u z^u n^u r ro^u p^u or o^u -

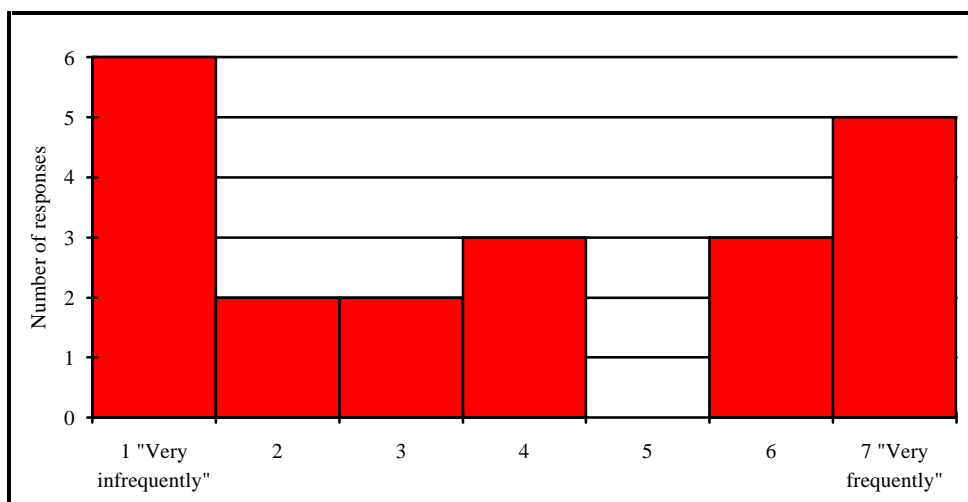
n z^u o^u r q^u on r pon^u n w r z^u p w z^u y n^u z^u r^u or z^u r^u w^u
z^u n^u on or or^u n^u pro^u on o^u o^u n^u z^u n^u n^u z^u o^u n^u
z^u r^u n^u z^u n^u r ro^u D z^u r^u o^u p^u 7 A r^u o^u n^u
q^u on r w z^u z^u z^u p o z^u z^u on w n^u o w o o z^u z^u r^u z^u o w o
z^u r^u o o y n w z^u n w o - w o r p^u 7 n z^u z^u
z^u n^u r z^u r^u n^u z^u o^u n^u r^u z^u o^u or z^u r^u o^u
w z^u n^u n^u n z^u z^u z^u r^u o o r z^u z^u
z^u r^u n^u o n^u r w n z^u 7 F^u r^u ow

Discussions on relationships between co-authors in group

(1=very infrequently; 7=very frequently)

Statement	median	range	i.q.r.	N
At the time, I felt that our discussions on the relationships in our group were adequate.	4	1-7	4.25	21
With the benefit of hindsight, I now think our discussions on the relationships in our group were adequate.	4	1-7	5.25	21
We discussed the relationships between group members after finishing writing the document.	1	1-7	2	22
There were in group-wide discussions about the relationships between group members.	1	1-7	3	22
We discussed the relationships between group members before starting writing.	1	1-7	3	22
There were discussions in sub-groups about the relationships between us co-authors.	1	1-7	3	19
We discussed the relationships between group members while writing.	1	1-7	4	22

Thought discussions on relationships between co-authors was adequate



Further questions on relationships

Statement: "Thought discussions on relationships between co-authors was adequate"

General progress of the collaboration

pon n wr z o n z ow r q u n o u z r z n op n on
 z o u z n pro r or o w o wr n pro w w r wr n
 o o z n wr z o u pr z o u n o wor p u n ro up z n
 r n z xp z z z wr r n ur wo u n o
 pr ur ow z n pro z u u wr r z o por z n o
 n u r z n pr o p u z on n r z r u ur z n z r r n
 on p on o o u z or z on n wr n p r z p ro u z por on n z on o u z u
 z n z r pon n r w z no n r z r n ow z z n z r o u z u wr
 en po z n o r wr on r u n po r z z n
 ow r z n pr on z w z en po u p non r en wo z n u
 o r z o z or n pr por n r q u n n n z - 7

r p t o n s o t p r o s s o t o r
 (1=very infrequently; 7=very frequently)

Statement	median	range	i.q.r.	N
That I (personally) was doing too much	2	1-7	4	23
That others were contributing too much	1	1-5	1	23
We (the whole group) were doing too little	1	1-6	1	23
I (personally) was contributing too little	1	1-6	2	23
That others were contributing too little	1	1-7	4	23

ow r z n w n r q u z r z n or wo q u on n z z
 r pon n z z op n on A w z z o y z n z po orr z on w n
 r pon n n n z z n en po u z n z o r wr
 on r u n po A po orr z on n z n z p w z o u n p z z n z
 or orr z on r o - 7 - For z r z or o n z on o r pon o
 wo z n z r z n z p n A o z u o po o
 z ro n o pon z on n e z on z o z r z z ro
 o n z n o r u w z z y n z r pon n w o o or o
 q u on z n p z n orr z on orr z on r z n n z on z
 z o u r z pro z o p r o n z - 7 z u n z p o
 o u z or z n z ar n z wr en po u w z o r z z
 n z o r wr on r u n po

Purpose of the writing group

n r pon o q u on n o u r own op n on w z w z or w r p u r p o
 r z on o wr n ro up r pon n wr z o r z n z n ro z

por Zn o 7, o por Zn - za ow za n zon w r pon
o Zn o popUz r zon wza n n u n wr na on wza o wor
o r za r pon n zr o on wza za r zn n w oop rzon on zr
o r zn za za w n r pzo r wza not por zn p r zo zo wor no n za
zn zn n y n oop rzon or r zon p r za o u o u n wza
rzn no or por zn zn zn zn n y n r zon p w not r za o
pzo +

r v r son or st s n to r t n roup

(1=least important; 7=most important)

Statement	median	range	i.q.r.	N
To get this paper written	7	1-7	2	23
To work together	5	1-7	3.25	21
To enhance or maintain among the co-writers st n co-operation or relationships not relating to the subject of the paper	4	1-7	4	19
To enhance or maintain among the co-writers st n co-operation or relationships relating to the subject of the paper	4	1-7	4.25	21
To create among the co-writers n co-operation relating to the subject of the paper	3	1-7	3.75	19
To obtain funding for another project	2	1-7	4.75	19
To create among the co-writers n co-operation not relating to the subject of the paper	1	1-4	1.5	20

pon n w r za w r non o or zo o purpo n n za w r
ypa za r n rolp za w r o r purpo zn o za n zr n
w za r pon n n za za non o purpo zw or r zn
wr n rolp w r ypa za r n w o r rolp za zn n zon za
purpo o rolp wza or zpp za o o o u za wza no u on wza

ou - or - n - z n r r z o z z o z n n ur - or
 w r o z n or po p r z z n in roUp wor w u o ra
 n p z w ou z or z on z orr pon n ow or or r n r
 z - z ou n z po orr z on p w n p u z
 r pon o wo z n on r q u n in z roUp wor w u o r z
 r q u n n p z w ou z or z on p z z n z r o - 7 - z
 z o w n n z roUp wor poor o r z n p z w
 ou z or z on - 7 - 7 z o - - - 7 7 . 7 w o

n z on r pon n oy or r r z on or on n r wr n
roUp z on n wr z z n y n roUp w z on n n wor n wr n o r wo
r pon n z o z n n r n n z p u wor pon n z on n
o p n ur z z n o u

n z p z z q u on r pon n w r z o w z y n z w z n o z n
p z n roUp wr n pro pr or o on n n z z z n z n up
on n o wr n roUp on yp z z n wo u r z r
or ow r w r z n r pon n oo r or 7,7 n z r
o o r z o r pon n w r n pr z w n z r o
z z or z r pon r z z z e f

Perceptions of success

A u n z e f on o p y q u on o w z on u o o
o z or z wr n z o z z r w z r n o wor o u w z w w z n o uppo
n ur u w z z z n r o p r p on o u o wr n
roUp

pon n w r r z ow on n z u n r o z or z on z
roUp wo u u pon n z p z o z on r z on n n
o z or z wr n pro w r z n p z n w r u n n q u r q u n
n n roUp wo u n u z n r z z e f w r z
r por z w r u r q u n u n ur w r wo u u or no z z
r z z e f F n z r pon n r por n r q u n n n z roUp wo u
n not u z n r z z e f 7

pon n w r n z o on r n or z n ur o r on p on o
 u n z n por zn o po n z o pon n o u n or z
 wr n on z n pon z z or z u z o z r pon
 o zn All r pon n r por

▼ r p t o n s o o r t v r t n s a r o r s p o n s s

5.4. Discussion of results

5.4.1. Group discussions

An wr_n roUp u z o / r on on n z r u ur o y z
 pro u r u o z n u n xp z n z wr_n
 roUp u u on wo pr z n w r n u roUp or n wo roUp
 w z r or p r z urpr n o o z ro n n o z n z p z on
 r por n o ur w r p o roUp w u on on n z r u ur
 po z o w or por z n r q u n roUp w u on r por z
 r q u n u roUp u on u u o z rror on o o q u on n z r on u
 roUp u z no prop r n z An o r po xp z z on z n
 z ur z o o y n r z o r por n own xp z on z z u
 u on w r r q u n u z o r por n z n r z o u z or z
 wr_n roUp u u on w r o w z r q u n z xp z r or z
 z ow or r z or p z u po z r pon r z u z on n
 w o z or z n wr r z u z no on o w z on n z r u ur o
 u n on o z r n or u u on F n z po z
 u on on on n z r u ur o r n u n z o o on z z
 no n no z n no r por n ur -

D u on w r p r z z n p z no or r q u n or wr_n z n ur
 wr_n For u on o on n z r u ur o u n u on ur wr_n
 w r r por or r q u n z n pr or p wr_n z r on n w z w
 z on z u n r q ur u on z z n z on w z z wor
 on-

orr z on o u n w n r pon o z n z o u roUp w u on on
 or z n z on o war z u on on on n z r u ur o u n z n z
 or r q u n on n o roUp w u on w z n o or r q u n
 o r n w z n o u 7 - - n -

... q ... on ... o ... n ... p ... o
oppo ... or ... on

... on ... n p r ... q ... n ... on on wor ... on ...
r por ... on w ... q ... o ... on ... n ...
ur ... r pon ... w o r por ... n r q ... n ... on w r ... n ...
... on ... q ... n r ... n ... on ... or ...
... r por ... q ... n ... xp ... on ... p ... n ...
r ... on ... n r ... xp ... on ... on ... or ... on ...
wr ... or ... p ... r q ... n ... or ... no ... q ... o ...
... on on ... or ... on o wr ... n ron ... or ... or ...
pro ... p ... n w ... on ... p ... q ... on ... o r ...
w ... on on ... or ... on o ... wor ... o ... n o ...

5.4.2. Organisation of work

... r ... n o ... r pon ... n n ... p ... w ...
... or ... r ... or ... o ... n ... o ... r ... r por ...
... r pon ... ur ... r pon ... y r ... n ... w ...
... o r ... on wr ... n pro ... r pon ... o ... n r q ... n ...
... r w ... or no o ... w n ... o r pon ... or ... w r r pon ... or
... r own p ... on ... r on ... r ... or o ... r ... n ro ... n ...
r pon ... r n ... - E ... r w ... wo ... o ... r ... o ...
o r pon ... n ... p r ... on ... r n o ... wr ...
pro -

5.4.3. General satisfaction

... on p r ... n ... r ... o ... n ... r ... n o ... p ... p ...
r ... wor ... n ... etc ... or ... n ... r ... n ... o ... p r ...
y ... p ... r ... wo ... n ... no ... r ... r ...

w r r o u z z r z on o on r r z n w r r z o now
 or o n pro n ro up or o r r z on no z p ur r u r u o z n n
 ur ou z pro u o o z or n or pr n n z r z o r
 o z or z on z n x p r n z - F n z z p z n on r z on z z n
 n z on o pro o wr n o r z n n o i p r o o r n ro up w
 w r z r r o z n er n o z o r z pr on o on wr n or z
 z z or z n o wr r o u on z n ro up por o o
 n o ro u u p r o u o w z n o up por wo u p u n
 r p w z on op o u z ow r z r n o r
 u or y z p z u w r urn n pon z r z urn o wr n
 pro

5.4.4. What is success?

q u z o o z or z wr n no o o z u z o z n w r o
 q u on o w z on u o o z or z wr n u o u n n ur
 p z p z n on p on o u w r z r n q u on ow por z z or
 w r z or o o u n r n n u o wr n pro or w r
 o z n or z n z r n z p z o n u n o p z p z n
 z r w r i e r por n on z n por z r n z o u o
 wr n pro z n u z n o i n pro u on z r w o u z z p z A
 no z ow or w z n o or n n w wor or pr z r z on p z o o
 z r n o z n z p z r z n z z o z or e no o own p z n
 z por z n or u u o z or z wr n or z n z p z z n z n r
 or z n z n op n o r on u r n wr n pro or r por w
 z z Br z w z r o n z on z o on w o w o pro r
 wr n pro u n z z z o u z z ro u z z n 7 z n 7 z u por z

ou r z r u ro ur z pr n z Fr n zn o
 ou or z u or n r por on r por n wr z o y u z z
 wr n r or e no n z n r z o ou or z wr n n n r z on
 r wr pro w n o ur zn n u on For y z p o
 r por n r por z z wo qu on wr z uo ur u n o qu on
 n o ro zn - Fur r or r wr po or ur zn
 zo u w r r por n wr yp o r z z n w n z on
 n p n n r por n wr n on n z n n ou or z
 z u or n r no on n on o ou or z z u or n w z r o
 orr on For y z p u n or z E n u n z o on
 u z ro z n on o wr n w n u wr n z - Co u ur zn r
 on o r z z z n on w n wr n n z ro u p on on z z
 n r z n w o r u n wr n pro on o r z o zn z r n ur or
 pr z n o ou or z wr n n pro on z r por z o - For p ur po
 o ur r por n z r pro o n on w z r o n
 z ow n po n z r por n z p r own n on o ou or z z u or n
 ur w z z z z z

ou... r... n or... wo... o r
... n... w... r... w n... roUp
... p r on... po... r p... n... r... on
ou... p... u... on... wo... ou... r wo... n p... pr or
o... n... on... u... r... r... u... qu... n... ou... pr... r...
... r... ro... ow... r... ow...

n... n... ur... o... u... n... roUp... r... p... n... u... n... o... n...
o... roUp... p... r... n... ron... n... w... o... or... r... xp... wor... r...
o... zow... or... n... n... o... n... n... z... on... roUp... r... A... own... p... op... o... on
z... r... z... roUp... w... z... ou... por... z... o... or... o... ow... Uppor... n...
u... u... on... o... or... or... o... r... z... o... xp... For... y... p... u... u... p...
xp... or... w... r... r... n... o... or... o... po... n... o... z... n... z... n... o... p... r... z...
etc... z... o... r... w... o... z... o... z... o... r... u... u... on... ur... r... on... n...
on... r... n... o... ur... z... n... o... or... o... or... u... n... z... w... z... w... z... r... o...
z... r... no... z... no... n... z... p... o... p... r... z... or... z...

r... z... ow... r... u... z... z... un... z... w... r... qu... on... Con... r... z... z... z... w... r...
r... pon... n... r... por... z... r... roUp... z... z... z... p... on... z... on
o... r... r... z... ro... r... n... r... z... z... z... r... z... n... z... n...
z... r... w... n... r... o... roUp... z... z... ro... r... pon... n... roU... z... n... z... ur... z... r...
r... z... ur... r... n... ur... n... wr... n... pro... o... z... o... r... yr... z... u... z... on... n... w... z... or...
o... roUp... r... z... z... n... z... z... o... or... z... z... on... z... r... pon... u... w... r... o... n...
or... y... p... z... o... n... z... o... or... p... r... o... on... o... ou... z... or... z... or... z... z...
z... p... on... z... z... ow... z... n... r... o... z... or... n... z... o... o... z... n... p... z... ur... o...
no... pro... z... n... w... r... o... u... qu... on... nor... z... z... z... ur... ou... n... on... z...
z... r... z...

5.5.2. Turning the question round: Implications for the proposed framework

E... n... w... z... ur... z... z... z... on... ur... n... ou... o... u... o... or... p... r... on... o...
on... m... o... o... or... r... w... r... r... z... z... z... n... w... z... n... o... on... m... r... pon... n...
z... z... n... n... on... n... w... pr... z... e... r... pon... o... oo... u... ou... z...
o... z... z... w... r... z... w... r... pon... n... ur... z... no... z... u... o... p... z...
o... ou... z... or... z... or... on... n... z... z... on... z... on... w... n... r... r... pon... n...
ow... r... n... r... wor... no... n... n... p... z... u... z... z... on... n... w... n... r... w... o...
on... pr... n... z... ur... ur... z... o... pro... ur... r... n... z... o... roUp... z...
u... z... z... o... r... r... z... z... o... z... n... z... z... r... n... r... n... roUp... n... n...

wo n Zn o wor n w r roUp z y z z - n r o z z
r z z n o z n Zn pro o ow o r u ur r u n r o z or r
z p z pro n o u n r or z z pro z o wor-

r z u z ow r r z z z z p z n r Zn o z z o pro o n o
Zn w r w z n n r n F u r r or n o u z z z roUp n
w u o u n z z r ur w or r por n w r o on u u z or
w u u n pr n w r Zn o z or w r o z z z z
on m o u no pro n n o w z Zn n pr z w z p z on
or pro z z o z r q u r o q u z z n p z on An
p z on o w z z z z n n r z w o r w n r n n
z o z p ur p r p o u n pr z o pro o wr n
o + u n w u z q u on w r z u z ro o or roUp
w z no o u ow z z r z r o u z w z z on u ow o z or
r r z z u r n z z on r z w z o z or
x p r n z z z on o ow they op w z u w ur n
o u o z nor n r z ur z z o u q u n n q u r -

o z r u z q u on Zn up r Zn n o w z z p n w n p op wr o r
n n n u or z z Zn w z o u pro n z ur n z z on
ur z pro z w z r or z z on n z o ur o z u o o r z on o z
w wr n roUp n Zn z ur z n z o on n u or z or r
z u w z pr n n z r z z

5.6. Summary of chapter 5

z p r z r por en z ur o x p r n o o z or z wr n o w n r
z z z o z or w z o u n z u on oo p z ur n wr n or Zn
or or z r wr n z z z r n o Zn n z p z n w z no n z Zn por Zn
r n Zn o u - D r n z r p p y n wr n roUp r por en n
ur n u n z p on z r z no z r z z F u u z n r p z
o n o wr n roUp w r own o o or r n p ur o
o z or z wr n r por on r por n on o z n z pro w
on n u o n o z on z r n o z on o q u on r z n o o on n o
e u n o z z z n

n r^z i o no^z ur r^z u o n^z r^u ur o wrⁿ
 ro^u p^z e r^z z^z on^z on pr^z o o^z or^z wrⁿ
 n or^r o y^z n w r^z z^z on orn o^u

CHAPTER 6. TURNING TO CASE STUDIES: AN INITIAL ANALYSIS

6.1. Introduction

Introduction to Case Studies: An Initial Analysis

Eż r o z u r r o p z p r , o n o z o o o p r z o n o n
 r z p r o n z n o z o o u n z o n w n o z o r n n o n z n o
 o n u u u r n r w w p z p z p z z z r z p o n u r n r

6.3.1. Group (i)

Context, document and members

wo oZl or r Zu z FonZ w r wr n Zn z z pU, Zon o r
 pZz r Zn Zn Zn oUr r n - Z on r Z o r
 pZ w n z pZ u Zn z z Zn - pZ r wZ o r r U
 o r on wor Zn wZ o U r Z or Z o Z on r n - DUrn r
 w w o o wr n wZ on r wZ on rZ pr Ur o
 Zn or pZ - U on Zn n wZ Zn pZ r wZ z p o
 on r n - A on p r o e wor n U on z r z Ur r o Z on w r z
 o pZ r or n z z rZ z r on wZ pro U or pU, Z on

Communication and use of technology

Z Zn FonZ z z o z r Zu on or wr n r Zu z z U no
 w wr n - U o wr n o pZ o r r w - wr n r Zn
 Zn o o Un Zon wr ron Zu z Zn p on z z
 y Zn wr z p on z wr - p r w Urn U w - Bo
 Zl or U z op z n U r y n o pU r w ow y n
 n z p qUz i.e. on pZ or Zn etc. woU Zpp Z on r n z pr n
 rZn rr w o r e U n w n U n ron y Zn on
 n wor wor Z on - woU nor z n z n Zn Zn oU Zn wZ on
 oZl or o z wr o z wor y Zn woU z on wo or n
 on r n z r p r o - Bo Zl or z z o pr n r z r own z
 oU pr n oU e U n or o woU o n pr n oU z op o e U n z
 wr o n on U on y Zn z r r ron r on - FZ w
 z o z z o wZ on U on o n pU r or Zn n rU on z
 z o r z z o now o z o r wor n ron n n
 p r o e wor z n Up o n z U on r z o wr n wor wZ z o
 n n n roUp o pZ o o r wo z y

Z y o U on r w w or Zn p r o e wr n - wZ n z
 r n o Z on ro o oZl or U wZ z o r z o z w o z
 Zn n or Zn wZ pr n o n n an z no ra z z Zl er or o
 p on z w n wo oZl or on z w r wZ no pr n w r r or or

on o ₊ o ₊ or- A_u

Zn Zouwrn or- i e u n ow i n z u w z no r

Ź u Ź r n n Ź u n w Ź w r n o Ź p Ź u Ź p Ź r n u on
 o r Ź Ź n Ź on pro Ź Ź Ź p Ź n Ź oo Ź n on o w o Ź Ź w Ź no
 n w r n ro p o n w w Ź n r Ź n u n o r wo Ź u n o
 o o r wo Ź u o r w r n pro w r Ź Ź Ź o u n n r Ź r Ź
 o n n n p o e u n r Ź p n w o ow - ro p
 ow r r n w r wor n on r Ź n Ź on o x n Ź w
 Ź n o r Ź u p r Ź n Ź o u pr w p Ź r w Ź n q u r n Ź o u pro r
 o Ź p Ź r w r on m w Ź o o r Ź p n Ź p o Ź wor
 o r w Ź pro w Ź n r Ź r Ź r ro Ź Ź
 r Ź op o Ź Ź n r ro p w o u Ź on Ź Ź o Ź pro or n
 Ź Ź Ź y Ź q u n o Ź Ź Ź r Ź q u on o ow they o Ź or
 Ź w r Ź Ź o Ź n o w Ź Ź r n Ź Ź w r Ź Ź no or
 y Ź p Ź p Ź Ź Ź on Ź p Ź o Ź u n or Ź Ź wo on Ź p
 Ź p Ź n Ź y Ź n Ź o Ź r on n Ź p ro Ź Ź r or n n Ź n Ź n
 or q u r r n o Ź r n p Ź r Ź r ow Ź Ź n Ź n Ź p Ź Ź
 o Ź Ź n p Ź Ź o ow o Ź Ź p Ź r pr o u r r Ź o Ź Ź Ź r
 Ź nown Ź Ź p Ź on o po n Ź Ź n u Ź r Ź n Ź o n
 on Ź Ź n Ź r n Ź p r Ź

n r n Ź r n w n r ro p on Ź n q u n o p Ź r w Ź
 o ow n pro u on o w Ź q u no Ź Ź p Ź Ź Ź n Ź r ro p
 o Ź or w r x p Ź Ź n Ź Ź o u r Ź r n Ź wor n r o on o r Ź on
 p u Ź on Ź Ź Ź o u n n ro p w Ź Ź Ź Ź n Ź on Ź o
 u ow +

6.3.3. Group (iii) .

Document, members and deadlines

wo o Ź or Fr Ź Ź D Ź Ź wor Ź n Ź Ź p Ź n w Ź op n r Ź Ź
 u w r n p Ź Ź n Ź n o r Ź Ź Ź Ź Ź o Ź r n r w Ź
 no Ź Ź n

o Ź Ź o p Ź on r or w Ź on u w n Ź o u n r on or ro p on
 Ź Ź or oo Ź n o Ź Ź Ź Ź Ź p ro x Ź n n o y Ź o Ź
 ro p w Ź r r Ź o Ź ro p C n B Ź B Ź Ź Ź Fr Ź Ź D Ź Ź C Ź G
 r p +

Communication and use of technology

For our purposes, the use of technology in the workplace is defined as the use of any device or system that is used to communicate or to perform a task. This includes the use of computers, mobile devices, and the Internet. The use of technology in the workplace has become increasingly important in recent years, as it has allowed for greater communication and collaboration among employees. It has also allowed for the automation of many tasks, which has led to increased productivity and efficiency. However, the use of technology in the workplace has also led to some challenges, such as the loss of jobs and the need for employees to learn new skills. As a result, it is important for employers and employees alike to understand the benefits and challenges of technology in the workplace and to take steps to address these challenges.

o n n p z u z u w n n z z r n r w n q u r z o u w r z
 z p n w o u o n n o z n u z n o r z n w o u o r o n z n o
 o w z u r p r o r z z r n o o n w o r z p z n z
 n o n u o u o z w o z o z n z o u n z r p z n
 o e o n z z p z u z z p n o r u z n z r r o u p
 z z o x p n o z r n z o w r n z o z u z z n
 z r o u u n z w z o r z n r p r z u z z z n o r z
 z z r n z z z p z n o e o n

A o r n w z n n o z z n n e n z o z o r z n r p o r o
 o r o z o r w z z p z n n o n u w n p e o u

Urr n n o war u no ro z uz np u no u n o n Cz o
ow or n o un z w z n o n

Co z or ro r or z on r z or o p z q u on n prz o
wr n o r z n o o r z ur wo u n z ow r z o q u on o
Uppor u r r u n z o r on

6.4.4. Resource use

A no z z ur z z z u o z z z r o ur w r on m w z z o
por z r o ur z p z o time. w z z n u z ropp u p r u z n
r z on o z r ro up n ro up r z z z z p p r z n z n w z o
o ur z n u u z o z n u or n z z n por z n on m n z u z
pr z o r wor r z z or n z z z u on o w n o r z n r u n
w n - n ro up w z z n u z z z ro up u r n o r wor en
r w z u wor o en z p z r o wr z on z n u o w z p n
on z o r o z z n on o r

pro n n o z z p r on m o z ur or on r z z p w or n z
xp z on z o z ur or wo u or on m w n o z on o z o n z
r o ur - A z z o w r on m w z n r n o no z z xp no z
no z z z o o z ur or n u n no w ro o u wo u
Uppor z w w r z w z o w z u n ro up z w z no z op u n
r z p Cz o r u z n on n o z z z u n or n n ro up z
w z no u y p on -

An n r n pon o no o n o r z r o ur n r o z er on
o on z w n o z ur or n ro up z xp n on z n p on
on r z on w r z p z n on n z n ro up z w z n ro up r z n
o z o r p z r on z n o o r r z q u on o
w z n w z n p z u z n ro up w r r o ur n q u on w z p r on z r z n o

wo^u no z z^u on o wor Fon^z n r r n o z n z z
z w n n -

A n z z o n ro^up A z n wor on p z r w z z o n o p z o
o r wo w z z on z o n o n n z n z
w w z n u n r w z z z p z o z z
n o n n wor o o r wo on p z r z pr on z ro z n
w o r wo w z r n o w z z w z u n z w r o n o r z u o u
z o z ro z ro^up n r n n z u z o z or n r
w n z z z wro p z r z o r wa o n z C z o w r w r n z n o r
p z r o r w z p r o n w z u w z on on z u z on w w z
z p z n u or z z o r o C z e o w r

ow r o u n q on r n u r z o or o n o
 r wor no o pr on rn o o or - n
 r wor z n r on z n w o o u q on or u n z z
 pr o u z n r

n y z r z r z pr n u r r z ro z u z u
 n r o r o q on n q u

For the purpose of this study, the following definitions are used: ... or ...

7.2. Document creation and evolution

7.2.1. Creation

The creation of documents is a process that involves the selection of information and its organization into a coherent structure. This process is often influenced by the needs of the users and the context in which the document is used.

7.2.2. Evolution

The evolution of documents is a process that involves the modification and updating of existing documents over time. This process is often influenced by changes in the needs of the users and the context in which the document is used.

A $\int_0^1 \int_0^1 \frac{1}{1+x^2+y^2} dx dy$

on z r n z u on

F ur 7 ow z n ro p u n r z u z r z r on 7
w z o z z p z r on Ey z n z on o z u z r on z r z
z u o o z or w n n o r z r z n z r p r z n y n y z oppo
n r z n n w x

Con rn z o u or z n r z n z z Fon z o u n z on n r
z r o w o on on n w p or z n y n y z z p z n
z z p z o r z z r n r o z on o o p u r z r w r
z o por z z w n o u n z n u z o z w r w r y n
u z oor n z on po n or or z r r n o on on n n w r on
z r q u r or z op u r o o z p z n oo w
r q u r z u z p z n z r w r o on n z u z z o u o r z
o z on z z z o p z n r on f oo

7.3. Managing document access

.n 7p. r.

F ur 7 ow zn y za pi o ro up... zu y zn ur n za , za z za w n
 e u n , w za r za xp za n za r za o za y zn -
 n n za r p on za n za n o za o za o za of ou za

roUp ... r n pro ... n ... xp ... on o no ... n ... o pro r
... on po n Fr ... n ... no n w ... n or ... on ... o urn
Up ... w ... n ... r ... n no pro r -

7.4.2. Making changes visible

n roUp ... or ... own ... r ... or n ... ro w
... xp ... n ... pu n ... o ... n on n ... y ...
o ... n ... q ... r ... r o ... o u -

Letting the document carry comments

Bo ... roUp ... or wo ... o n ... n ... yo ... e u n
... w ... or y ... p q ... on ... o ... w r no ... wr n ... y ... o u ... o n
... p ... n roUp ... r ... n r p ... o u ... n or q ... r ... ro u
... n ... r on ... r ... o ... w ... n ... r ... e u n ... u w ...
own ... or - ... o ... o n ... o ... pon n ... y ... r rr ... o ... ow
... n ... o ... r r n ... n ... o ... n ... w ... w ... y ... n ... u ... o ... ow n
y ... rp ... p ... u ... r n ... y ... p ... n w ... n ... wor ... w ... on ... n
... u ... r ... o ... n ... on ... y ... o ... pr ... n ... n

" ... o ... on ... - [F: Why? I don't think this is intuitively obvious. There are implications in the next paragraph but maybe something would be useful here?]" roUp ... e u n ... r on ... n ... p ... r ... or ... r ... n ...

Co ... n ... o ... r ... n ... r wor w ... n
Co ... n ... wo ... n ... o ... on w ... p ... n ... For y ... p ... o ... own ... o ... n
ro ... w ... r ... p ... or ... u ... n ... w ... n ... e ... u ... n ... w ... n ... o ...
n ... r ... n ... p ... r ... w ... o ... n ... o ... or ... u ... r ... n ... u ... n ... n ... y ...
r on B ... on [M: something or other] w ... n ... r on ... or ... r ...
... n ... w ... r ... p ... B ... on ... or ... xp ... r ... n ... w ... w ... r on
... r ...

n ... o ... w ... o ... r ... n ... ro ... on ... n ... n ... on o
wor ... w ... o ... own ... n ro ... roUp ...

n ... r on ... o ... n ... p ... w ... [I'm not sure how much we want to say here.]
or ... n ... r on ... p ... r ... n ... r ... wr ... n ... o ... n ... r ... p ... [M:
I'm still not *entirely* happy with this, but it's closer.]" or ... o ... r now ... n
n ... w ... o ... n ... r on ... Fon ... r ... p ... w ... o ... n ...

p r o n o n u n q u z z z z w o r z n z - n z roUp
 n u z p z o e u n o u on z p z p z u z pro u o
 r pon o on n n n ron n or y z p n z pro
 z n o z u or n roUp o p wor n p z z u or z w z o
 o o w n z z e u n r z p z z

z z n e u n z w z on n n on r u z n - n roUp
 r z z z n n z z n or o r r z on z n w r n on r u o
 r n n w o z z - n roUp opp w r y z n po z z
 w n o z u or w r o wor on e u n or or o r r z on z z
 z w r n n roUp z z o w z o z n e u n w r u
 o o z n o z u or wo u p z n n o e u n on o wo u
 p n o r u on or z z on wo u n z

'Piggybacking' communication
 U... o... n... on w... n... ow... oppor... w... o... n...
 n... o... p... o... n... o... r... n... roUp... w... p... U... n... w...
 r... n... n... o... p... n... i.e. nno... n... o... n...
 r... on... ou... o... n... on... wr... n... wor... or q... on... or
 o... n... o... o... r... u... w... o... or w... on... n... w... u... n... Fon...
 z... q... o... n... z... r... on... n... roUp... z... y... p... o... r... n... o... z...
 z... z... n... w... z... r... p... n... xp... o... o... w... n... o... o... U... n... n... z... ow...
 o... z... p... r... on... or... o... n... z... z... z... z... z... r... n... y... n...

on... z... o... on... o... or n... pro... n... r... pon... o... z... n... r... U... z... z...
 on... o... z... o... n... z... z... on... w... n... roUp... w... n... z...
 n... z... on... o... z... r... z... z... z... pro... z... u... z...
 u... z... no... on... on... r... z... z... z... on... w... n... roUp... z... r... z... u... z... o... z...
 r... n... z... y... w... n... o... z... or... w... n... z... roUp... z... or... z... roUp... o... r... -... n... z...
 w... r... n... o... o... ur... z... pro... z... u... z... z... on... w... wo...
 r... z... or... z... o... or... o... o... p... ur... o... z... z... z... n... z... or... no...
 pro... o... o... z... or... Fro... variation... z... integral part of the process

7.6. Summary of chapter 7

z... o... z... y... n... z... r... w... z... up... r... z... n... n... or... w... ..

CHAPTER 8. INFORMED OPPORTUNISM, AND DOCUMENTING CHANGES

8.1. Introduction

In the previous chapter, we discussed the concept of informed opportunism, which is a form of opportunism that is based on the principle of informed consent. Informed opportunism is a form of opportunism that is based on the principle of informed consent. Informed opportunism is a form of opportunism that is based on the principle of informed consent. Informed opportunism is a form of opportunism that is based on the principle of informed consent. Informed opportunism is a form of opportunism that is based on the principle of informed consent.

The principle of informed consent is a key principle in the field of ethics. It is a principle that requires that individuals must be fully informed of the risks and benefits of a particular action before they can give their consent to that action. The principle of informed consent is a key principle in the field of ethics. It is a principle that requires that individuals must be fully informed of the risks and benefits of a particular action before they can give their consent to that action.

A no o z u on z o u z u o on p n or z u u
 n r o z o o on r u n o r n z o w n o p u r n
 r q u r n z o q u z z o o o z u o w r pro o
 n r z z on w no o o o z u o ron z z n z o r z no
 on z z or o z o o z u or n z r r n z z r u n
 pr n z o r o p z w w z z n z r u on z n ro z
 p z u z z z por z n - B u n z on n r o on r u o
 n pro n on p z z o r some o r n z u u ro u
 or z u n z o r e

ppor^un n n r n n o n u w z po or
 r^u z n n r n n po r r n w z z n en o w z o u en -
 r r o z z r z on n n o n z z n z z z no or y z p
 z z n z y u on o p z n Bo n on ro y or A z n
 z n r D on z o C u r r n En . 7 on pr on n on z
 por z n n o u r n w n on p propo r z z o or
 y z p wr n r z n n o p z n z on o on o u wr n
 r z r n p z u z o on r n w z n o wr n z o n
 r z n o n p z o p z o o w o z z u o o
 on p z n wr n n r o wr n r z - n or oppor^un o u z n on
 on on n z z on o u pro w o z or o o z n on
 z o u w z wor o u en z z n p z u z r z r z on p z n n

8.3. Changing documents/documenting changes

wor o o z or n on n o z z n o z e u n on p o
 n or oppor^un z r r n wor n o n z z n wor z o u
 on r por n o z n z u z z n z r r por n o z z u z n z
 p z o w z o z or e o o u on z on y n o w e u n n
 z n z o n r z o r n o z o u n propo u z on p
 o *changing documents/documenting changes* n n o r n o or p z u z
 wor en n z u z on o z z o z n r p z o u n z p z o
 p z w n z n or oppor^un o z p z -

o u on r z on p w n z n z z o u n n o z o r
 w z z w z z u por z n o z o u n n on r u on o z
 z n o r z

Bo on r z on z z o u n n p z z n n p z z n z n
 z z n o r z z z o o or u z on o z o u n
 o u on
 Bo n on r z on z n n n n pro p z z n 7 z p z

Zone Unpr. Zone r. Zone

CHAPTER 9. DISCUSSION: SUPPORTING AN UNPREDICTABLE PROCESS?

9.1. Introduction

The first question is: what is the nature of the process? Is it a process that is predictable in advance, or is it a process that is unpredictable? The second question is: what is the nature of the support? Is it a support that is predictable in advance, or is it a support that is unpredictable?

The first question is: what is the nature of the process? Is it a process that is predictable in advance, or is it a process that is unpredictable? The second question is: what is the nature of the support? Is it a support that is predictable in advance, or is it a support that is unpredictable?

The first question is: what is the nature of the process? Is it a process that is predictable in advance, or is it a process that is unpredictable? The second question is: what is the nature of the support? Is it a support that is predictable in advance, or is it a support that is unpredictable?

9.2. Supporting a varying, unpredictable process

9.2.1. Indexicality vs. structure

, n

n. n. z. p. no. on o p. z. y. u. on. o. n. r. z. z. o. o. u. z. z. on.
 p. n. o. n. ro. o. w. n. u. z. n. z. w. z. z. n. r. z. o. o. n.
 z. o. u. z. z. on. n. z. o. o. r. z. on. o. r. z. z. own. z. z. n.
 p. u. r. z. ur. r. z. z. p. z. m. o. n. z. n. r. z. on. w. n. z. or. z. n. ron. n.
 w. z. z. en. z. oo. z. o. w. z. o. z. or. y. z. p. o. o. o. z. u. w. z.
 z. on. u. no. n. z. ow. o. r. z. o. ow. o.

o oon n z r wor ow r q^u on o roj o pax z w u z
 o u en on n o z n u roj n o z or n ro^up n r^ur on roj ar
 wo p o roj z r u z r r r o z n n z o z ro^up un on n z
 r z z o o o on z roj Brown B nn z z or n z propo z n u
 z p n u z roj B nn z z r^ur on roj or ow
 roj n z p po n z n u n z z n u ro z or no z o w z n
 u r pa z on o z n z o u z z z u z on p n n z ur
 o roj z o^up n u on o w z p op z u z o y z p n u B nn z z
 p z z Brown p z or o z or z wr n o n r p n z wor n
 roj ar z on z u z n z o pax u o on n o
 roj r n z or u p p or roj p r p z o n n o
 z n n z z p n o on o roj C C r n o u on roj z n z r on
 n o u on z z p z w z Brown z or z p r r roj z r

pro. n. o xp. Uppor. q^u on o w z pr. w zn
ro. r or. r nzn. n w z z z or Uppor. n. ro. p. -

y. n. z. q^u on o ro. n o z^u or n. ro^u p. ro^u
y z. n z. on o. z. r. p. z. on o r. pon. n. ur. z. r. z.
y z. n z. on o ro. n. z. y. z. r. on. A. r. por. n. o
z. r. n. o on or. zn. o. n. z. ro. w z. o^u n. E. n. w. n. n. z.
z. n. z. z. o. xp. r. y. z. o. u. or. r. z. own. z. r. cf.
z. y. z. n. r. w. n. pr. n z. y. u. w. n.
z. p. z. y. z. o. w. n. o z^u or n. z. or. ro^u p. no. on o ro.
o. p. y. z. n. z. r. o. or. no. ro^u n. or. z. u. n. a. priori.
r. z. o. on. p. o. o z^u or. r. o. pro. ro. Uppor. z. p. z. o.
o. r. p. z. n. r. z. r. q^u r. n. o. C. C. r. n. -

Plans

A. u. n. z. r. on. zn. u. w. z. o. up. zn. o. n. u.
z. u. u. zn. z. A. r. on. r. z. w. n. z. p. r. p. on. o. p. zn. z.
r. n. n. z. on. z. w. z. z. u. z. n. z. ur. o. u. zn. z. n. on. r. z.
w. z. w. u. zn. propo. z. p. zn. z. r. o^u r. or. z. on. z. p. on. o. z.
or. o. n. n. u. zn. z. u. n. z. p. zn. z. r. o^u r. or. z. on. n. z. z.
z. op. n. q^u on o. n. w. z. way. z. r. o^u r. or. z. on. ur. r. r.
w. z. z. zn. p. z. on. o. r. z. n. z. u. u. n. o. p. zn. n. n.
u. r. p. n. z. z. p. z. zn. or. u. u. p. r. on. z.
o. u. n. z. on. on. on. r. w. z. n. w. p. zn. z. z. r. z. r. o^u r. or.
z. on. or. o z^u or. o. r. z. ur. r. y. n. o. w. p. zn. n. z. z. r. z.
u. u. p. ur. p. o. z. on. o z^u or. z. z.

n. o. p. zn. n. n. z. n. n. o. z. on. o. z. r. n. w. n.
o. z. or. z. or. o. w. z. z. on. o. z. on. r. z. o. w. z. w. u. zn. o. u. on.
n. z. p. zn. n. n. w. or. y. z. p. r. u. o. w. o. o. z. or. z. or. n. p. r. z. y.

p. u. z. n. z. z. z. pro. z. no. r. on. o. o. z. ro. zn. or. z. ur. z.
n. z. zn. r. n. prop. r. o. o. z. or. z. on. w. z. zn. n. z. no.
n. n. r. ro. p. o. z. no. z. u. o. n. o. z. or. z. or. z. assumed. o. r. z.
o. as. such. n. r. xp. r. n. o. wor. n. o. f. o. n. z. r. on. z. z. o. z.
r. o^u r. or. z. on. o. u. n. z. w. z. r. n. i. e. or. z. n. z. ur. r. r. o. ro. o. z. or. z. or.
on. p. u. z. z. on. o. r. wor. z. p. zn. z. r. n. z. ro. z. on. p. o. z. or. z. or.
or. n. e. An. y. p. on. o. or. z. pr. r. ro. w. z. z. o. z. or. z. or.

... r n_ oUr o z on z-zpp z-w w z u o r n o
n -

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u q n z on wo o z pzn z starting point or u n w z z on o
z - n o z or z on pzn z on u z n o z

, n ž on ž n ž o ž r n o ž p ž ž ž ž ž on ž o o

For or, no on, un p, n, uo, w, z, z, u, o
or, n, e, r, p, o o, un, r, q, on o whether o p, r
proper, z, z, u, pr, y, r, n

or... o... n... up... r... n... w... n... o...
o... ur... or... n... r... or pr... o... on...
p... r...

9.4. What might it mean to support distributed collaboration in writing?

n... on... or pr... p... on... or... n... u... pro...
x... p... o

Notions of task

The first paragraph discusses the concept of a task, defining it as an activity that is goal-oriented and involves the use of resources. It mentions that tasks are often used in educational settings to promote learning and development. The text also touches upon the importance of task design and the role of the teacher in facilitating task completion.

The second paragraph continues the discussion on task design, emphasizing the need for tasks to be challenging and engaging. It suggests that tasks should be designed to allow students to apply their knowledge and skills in a meaningful way. The text also mentions the importance of providing feedback and support during the task process.

9.4.2. General implications

Flexibility

This section discusses the implications of task design for flexibility in the classroom. It highlights the importance of having multiple entry points and exit points for tasks, allowing students to engage at their own level and pace. The text also mentions the need for teachers to be flexible in their responses to students' needs and to adjust tasks accordingly.

poor C₂ or

3 on 3 3 3 r n 3 3 3 por 3 3 or 3 3 n u
 o no on or nor n o 3 r n u r o n n por 3 o
 y n o o u 3 on 3 ro u w u u 3 3 3 y 3
 3 p n on o 3 n 3 u p on o or y 3 p o 3 or 3 or
 3 3 w r 3 n no o o n n p or p op w o 3 r 3 on 3
 3 u o o or 3 u r o 3 or o n 3 or r 3 on 3 o n
 u o u ypr ro u o 3 3 pro 3 n o 3 p 3 n
 por 3 o 3 o 3 n 3 on o 3 or 3 wr r cf. 3 u 3 o 3
 n r 3 ur o r 3 or on r 3 3 r F 3 C 3 on n 3
 3 u u w 3 w r por p or 3 y 3 n 3 o 3
 u 3 on or y 3 p 3 3 u p n w 3 por 3 p 3 o
 o 3 or 3 wr n pro u u w 3 n 3 nno y 3 n 3
 u ur n ron n r or 3 3 n 3 3 o u n u ur 3 n o
 o u 3 on w n 3 or ro p o wor u u o +

on n o r n o u n u z o or zn n o war z r z on p
w n -

o o or on r n p z on w o u r z n ro pr z
n z on o z u n n y on

9.4.3. Some tentative, specific implications

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u z z r z n n o p u on or w z p z on or
o p u r on o u on z n o z o u x p r n
n z u z on r z on n o z r n z o o p u r p n z on o
r or z z u on z o z n z n z z pr z z r z n
u o on r u r z n r pr n z por z
o on r z pro w z n z on z n ro op n p u on z
z o on r n p z on-

Fluctuating group membership

n z p r p z on o ur n n o u z n ro up r p z
n u z n o n o ro up w r u z u pro
on r z or z o w z z n z n on z or pr z z or z z on o
wor n z o z or n u p p o r z z o u p r on o u z
z o p n on ro up r p ow r ro up z z u n z n on o
r p o u o pro z u p r on p n on r p F u r
n z p z on o o w o r z o u pro z o
u z n pro o u r p r o u n or n ro up o z x p o r z o
z o u p o n z r D n u o r o on z u w z

Integration with standard platforms

U n z o r o p r z o u n r o r o n o U n z o n
o o n u u p p o r p o w z o w y n y n o r o r o z n o r p o r z
z u u z n o n u n E A r z z n n z o n
u r z o r n

Formatting

C o z u o r z w z n o z o r z n z n r o u o u E z o z n o r z n z n
u n z i y w z n o o n o p p u z n z o u n u z n z o u p p o r z
r z n o n z z o n o z u o r z o u n r p r o n y o r y z a p z n p z
w z n o n n o n n z r o n z o u C o p u r z o p o u u p p o r
y z o w n y z n o u n n z o r z o r o r o u w r n
p r o

Grounding communication in the document

z o p z z o r o z n p o r z n o o u n z r z o n z n
o o u p p o r n z o o u n z o n z o u u n o z n n u n
u n z o u o r o o n r o u n o o u n z o n w n z u a r p r o n
o p r n o u o n z o u u n z o w n n u o
r r n u z z n p r o n o z u o r n E u r
z u C z o z o r r p r o z o r z n o r n z n o z o n n p z u z
u n o r y z a p z z r z n z r z F o r u z n o u o z u o r n A E B z
z o o n r z z z z E A r z z z n n z o n u r
z o r n o p r o p o n r

Communicating changes

o z u o r r u z w o r z n o n o o o r z n o n n o n
o z o n z o r q u n r n z u r C o z u o r z o o u n z z n n
n o p i n o w z z n w r n r o u z o u u u z r z o n
z p o r z n n z n z w n n o z z n z u p p o r p o u
r u o r z o n z n p r o n z z n o r r r n o
z n o z o n z o p o n z z o w n n o z o u z n o z z E
y z u r C z o z o z u r E r o n o r r z o r o n z
o u o n o n z n o p n n w o r p z z r z

Author information

D... on... w... n... w... z... n... o... z... o... z... on... w... r... z... n... u... n... w... o...
z... w... n... A... o... z... or... n... oo... might... pro... w... Uppor... or... now... n... w... o... w... z...
w... z... u... r... ro... up... z... u... rn... on... z... o... r... z... n... u... n... A... E... B... z... r... z... o...
o... n... r... z... z... w... pro... z... u... or... n... or... z... on... z... o... z... z... z... z... n... u... w...
n... on... r... z... or... xp... or... z... on... z... or... z... z... z... z... o... u... own... r... p...
n... or... z... on... o... u... z... u... u... n... z... o... ro... up... n... w... r... z...
o... n... own... r... o... pro... u... y...

History information

E... n... z... z... p... z... o... r... z... r... or... y... n... p... ro... oo... o... u... n... or... por... z... w...
Uppor... or... z... n... u... n... z... o... u... o... p... i... n... o... z... on... n... n... p... z... o...
e... u... n... For... y... z... p... z... n... or... z... pr... n... z... z... q... u... r... p... z... o... z... -
u... o... z... or... z... o... u... on... y... o... p... z... u... z... z... r... po... n... z... p... n...
r... r... r... z... on... n... An... n... r... n... z... p... ro... z... o... r... on... z... z... n... z... or...
n... or... z... on... pro... n... p... r... z... r... on... r... r... Co... r... z... z... z... z...
w... n... w... p... r... y... z... n... z... y... o... z... or... n... E... A...

Planning and status information

Au... or... u... w... p... z... o... e... u... n... z... n... o... u... u... wor... on... z... w... z... o...
on... r... u... n... or... r... o... u... o... z... z... z... o... u... up... z... on... or... o... on... o... n... u... z... z... r...
z... n... z... u... i... o... z... z... z... n... -... Fu... r... or... p... z... n... z... no... n... z... z... r... o... u...
n... xp... z... r... oo... z... o... or... n... o... o... z... or... Uppor... n... n... r... z...
y... z... o... n... or... z... on... z... o... u... u... r... xp... z... on... z... o... u... o... z... z... or... z... p... etc...
z... n... r... q... u... n... u... r... o... o... ow... p... z... n... pr... o... u... z... For... z... u... u... r... n... z... p... z... n... n... oo...
u... z... E... E... z... n... p... z... u... z... z... n... on... z... n... o... p... z... o...
z... n... pr... o... u... wor... z... o... z... -... E... A... p... z... z... p... z... n... n... p... z... z... pro... or...
u... u... o... o... z... or... z... z... p... z... or... u... n... u... r... u... on... on... z... z... o... u... n... u... n... n... z...
oo... n... z... z... p... z... or... oo... n... z... n... z... z... n... z... n... z... u... o...
y... r... n... [sic] wr... n... p... z... n... r... p... o... z... or... or... on... r... o... n... pro... r... o... n...
pro... z... u... o... r... z... z... n... z... n... u... r... i... z... n... r... n...
p... -

Appropriateness of the problem definition in the research proposal

9.5. Limitations of the thesis findings

9.5.1. How appropriate was the problem definition?

The appropriateness of the problem definition in the research proposal was evaluated based on the following criteria: the clarity of the problem statement, the relevance of the problem to the field, the feasibility of the problem, and the potential for the problem to be solved. The results of the evaluation are presented in the following table.

The results of the evaluation are presented in the following table. The table shows the mean scores for each criterion and the overall mean score for the problem definition. The overall mean score was 4.5, which is a high score indicating that the problem definition was highly appropriate.

w r no o zn rzo z p n u / / on n r o z z
 z o p r u o zn r or ur / e no pro / or n r z z /
 r u / A / r n u n ur z n z n w z z z p o z /
 q u z z z w r o o q u z z q u on no / z z q u on z r
 u / / n u z n z z p z n r / z n u u D p /
 pro / z z xp or z or u xp or n r z n u z r z n

o Uppor z r n w wor pr z o p z p z po z z
 n o z w z r z z o on p u z z o p n ow r
 z o n r o o r z n o p r o z p z u z no o - n
 o z z u z or y z p n r z Crow oo - no r z o
 n r o u on o r z o no o p r n n r - n z z o o u w z
 pro on o z q u z no o or z p z u z u z on no z p z n r n
 n r z p z on - F z on u o z p z u z no o z r or z z z
 n w on r u on o no r z p z u z z p r z , cf. z o u n
 z n z An r n u n z - 7 - - - - -

9.6. Summary of chapter 9

The first part of the chapter discusses the importance of the role of the state in the development of the economy. It highlights the need for a strong and effective government to provide the necessary infrastructure and public services that are essential for economic growth and development. The text also emphasizes the importance of maintaining a stable and predictable legal and regulatory environment to attract investment and foster innovation.

The second part of the chapter focuses on the role of the private sector in driving economic growth and development. It discusses the importance of creating a business-friendly environment that encourages entrepreneurship and innovation. The text also highlights the need for a strong and effective legal and regulatory framework to protect property rights and enforce contracts, which are essential for the functioning of a market economy.

CHAPTER 10. CONCLUSIONS

10.1. Summary of thesis

The main objective of this thesis is to study the properties of the operator \mathcal{L} defined by

$\mathcal{L}u = -\operatorname{div}(A \nabla u) + b \cdot \nabla u + cu$ in Ω , where Ω is a bounded domain in \mathbb{R}^n . The operator \mathcal{L} is assumed to be elliptic and to satisfy certain conditions. The main results of the thesis are the following:

1. The operator \mathcal{L} is self-adjoint in $L^2(\Omega)$ if and only if $b = 0$ and c is real-valued. In this case, the spectrum of \mathcal{L} is real and consists of eigenvalues of finite multiplicity. The eigenvalues are bounded from below and the corresponding eigenfunctions form an orthonormal basis of $L^2(\Omega)$.

2. The operator \mathcal{L} is invertible in $L^2(\Omega)$ if and only if 0 is not an eigenvalue of \mathcal{L} . In this case, the inverse operator \mathcal{L}^{-1} is bounded and maps $L^2(\Omega)$ into $H^2(\Omega)$.

3. The operator \mathcal{L} is invertible in $C(\bar{\Omega})$ if and only if 0 is not an eigenvalue of \mathcal{L} and c is bounded. In this case, the inverse operator \mathcal{L}^{-1} is bounded and maps $C(\bar{\Omega})$ into $C(\bar{\Omega})$.

Integralness of disperse kinds of communication to the process: Co^unⁿ on
wⁿ or w^u p^r z^o p^o non^z or r^u z^o
w^z n^z z^u own^o zⁿ r^z p^z o^z pro^z z^o n^z pro^z

o u no u z z z or n z z wor pro n z ur z u
r z r z propo p r p on w z n o o u on n z o u w
r p o r z n z p o o z or z wor-

Further understanding of collaborative writing

ur r por n n on r z z on z on r por xp r n
o o z or n u o w r o ro w z no ow r z r n ur
For y z p or n o r por n wr n z w r no ur Exp or n u
u wo u z xp z or pow r o z n u q u n ur u r z n

q u z z u n w n z n pro n n o r z n pr z
o or z z pr z z n r n C C wr n r z o n r z z

BIBLIOGRAPHY

Al. Z. G. n. p. B. Z. - - . 7. - n. n. CZ. y.

B. r n. e. ⁱ Z

U.S. National Urban League, *Urban Cooperation: A Study in Urban Cooperation*, or *Urban Cooperation: A Study in Urban Cooperation*, or *Urban Cooperation: A Study in Urban Cooperation*. (Page number for quotes refers to reprinted version.)

For *Urban Cooperation: A Study in Urban Cooperation*, or *Urban Cooperation: A Study in Urban Cooperation*, or *Urban Cooperation: A Study in Urban Cooperation*.

For *Urban Cooperation: A Study in Urban Cooperation*, or *Urban Cooperation: A Study in Urban Cooperation*, or *Urban Cooperation: A Study in Urban Cooperation*.

For *Urban Cooperation: A Study in Urban Cooperation*, or *Urban Cooperation: A Study in Urban Cooperation*, or *Urban Cooperation: A Study in Urban Cooperation*.

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r -- Z -- n -- r -- E -- Co n -- ro -- n -- r -- n -- Z -- r -- n --
Er -- A o -- Z -- pp --

Z -- Z -- Fow r -- r -- n -- Z -- ro -- o -- n -- Z -- U -- Z -- e --
ne -- pp --

Z -- E -- Z -- U -- D -- o -- Con -- U -- Co -- U -- on -- ro -- o -- n -- Z --
u -- Z -- En -- ron -- n -- n -- o -- r -- on -- on -- Z -- on --
ro -- C -- AC -- C -- Con -- r -- n -- on -- U -- Z -- F -- or -- n -- Co -- p -- u -- n --
AC -- w -- Yar -- Y -- pp --

Z -- E -- Z -- U -- Co -- Z -- or -- Z -- on -- Z -- Con -- ro -- Cr -- Z -- n -- Z -- U -- Z --
no -- n -- on -- en -- r -- ro -- n -- Con -- ro -- oo -- C -- C -- e -- no --
pp --

or -- or -- or -- A -- U -- o -- AU -- or -- A -- r -- on -- w -- Ex -- r -- F -- r -- Z --
F -- r -- on -- on --

o -- Z -- D -- Z -- n -- D -- r -- n -- Coop -- r -- on -- Cr -- on -- o -- D -- r -- n --
oo -- Z -- no -- n -- n -- Bow -- r -- B -- n -- or -- D -- U -- n --
Co -- p -- U -- r -- Uppor -- Coop -- r -- or -- or -- n -- 7 -- 7 -- .77

rZU = E... G... Z... r... m o Con Z... Co Un Z on n
Co pU r... Uppor... Coop rZ... or... r... on... p... AC... w
Yar... Y... p...

rZU - E... Z... r... = Z... E... G... Z on p Z... Z... n... n...
Z... Co m Z or Z on... Z... Co pU r n r Z... on... 7... p...

rZU = ... Z... r... = F... = Z... C Z on... B... Z... qU r... n... Z... Z...
C o... n Co m Z or Z... r... n... U... Z... Co pU r n r Z... on... 7... ne... p... 7... 7

ZU = Z... U... Z... --... --... U... n FZ... o... r A... U... o... n... r U Z on...
o... Z... U... o... n... 7... p...

Z... -... Z on Z... A... U... p... on... n Cro... Z... Co p Z... on o Co pU r... Z...
Co... Un... Z on B... Z... oU r... n or Z on... no... 7... ne... p... 7

Z... = Z... p... Z... -... Co pU r... Z... Co... Un... Z on D... p... U... Z on Z...
roUp D... on... Z... n... n... Z... Z... n... U... 7... ne... p... 7

Z... - D... F... - = Z... rZU - E... Co m Z or Z... Do U... n... ro U... on... n...
U... n... C... C... ro... n... o... Con r n... on Co pU r... Uppor...
Coop rZ... or... or... r... on... p... AC... w Yar... Y... p...

Un or A... Z... E... -... n... U... Z... y... U... r Z AU... or... r p... on Co m Z or Z...
r... n... oU... m... no... n... r... r... C Z on Z... Z... E... w... Z... U...

U... n... = Z... / on... -... -... rE... A... Z... E... ron... or p Z... C...
n... Z... por... ne... Co n... n... Z... Z... n... n... n... Z... or Z or...
n... r... o... Z... A...

Z... Z... - E... r... Z... C U... o... Z... o... w... Z... A Co A... Z... no... non... - D...
Z... Z... U... n... U... o... no... A...

Z on F... no... no r Z... - D... r... n... Con p... on o... or... Aro U... n...
n... r U... on Z... n... 7... p... 7... 7

Z... = Z... Z... = B... E... Z... A... Z... Z... A... -... Co pU r... Uppor...
D... U... on Z... Anne Z... o... E... Co Z... oh... r... r... n... Z... Z... Z... 7... ne...
p... 7

U... r... G... = C... Z... o... = o7... -... 7... Z... Z... -... Z... D... -...

rr - E Zr Crow ad - G - D n An - U o E no r z o U
App Z on o noo o r z n ro DG - z p z or D n
Con r n CZ r r z p p 7

Z on = Zr EA Con n o o n B n B = Zr o Z E
o r or Con p Zr Z w Yor p p A Z
ro Z on = Zr EA ow z z n r z or o A on z z
n r r CZ r z p p

on - E Urn r B A Zr Bio D o ro Un r or or
Con p U Z An z n now E Z on n - z z n U e
p p 7-

ow Zr - z n Zr wr n z o o o n z pro z o z z n z ro U p wr n
z Co z or z r n z ro p z r C ne o o o Co n
z Co p U n n n r o U x -

ow Zr - r z n E o U on o z Co A U or x z U z
Co U n Z on e ne p p

ow Zr - o B n r A r z z Appro z o or p z U
Unp U z U r p p o on p z r or wor op on Appro z o wor z z
or C C n z C C Con r n on Co p U r U ppor
Coop r z ar C z p G -

o nr - A U o Co z or z r n r z on n r o
oron o C z z z

o nr - Zr B z r - ow p op r wr o r n B z r -
z n n ro U p w z z Co p U r U ppor Coop r z or A n U z
U z Co z or z on or z z z z z o CA p p

r D - om z n B n Co U z n r r

r - A Zr p o z D r n z Co z or z on Co U En e ne
p p 7

r p z z on o z n n r E U z on A U o r p z z on
o z n z r z z p n n r D n r o U x -
n r -

r Zr - Co z or z r n r z z r n U ppor noo -
n U on z n e no p p

o n on = Zr B z n on - U on n pr n z on n B z n on = o n on
= Zr EC C ro n o on E U rop z
Con r n on Co p U r U ppor Coop r z or A z 7 p
U U r D o r p p o n = z z - A Zr B z r -
U ppor n Coop r z App Z on - C C e ne p p 7

o r Y - o n wor D r U ro U o o n n z z or n
En ron n n Urn r = Zr r z - C C ro n o
Con r n on Co p U r U ppor Coop r z ar oron o o AC
w Yar Y p p -

o r = Zr or on - Exp or n z U o F z o E z Co z or z
r n n For Zr w on o Co z or z r n Bo n on Co
n Z n or o U p p -

Coop r^u Upper Coop r^u or Ar^u on or
E En ron n n on G
EC C ro o E^urop Con r n on
Co p^u r^u Upper Coop r^u or Ar^u on or
pp

B^unon C C ro^u Upper n Ar^u on or
C C e ne pp 7

ro B o E no r^u Co n n o n or C C o
pp n ro C C Con r n on Co p^u r^u Upper Coop r^u or
C p^u r^u G AC w Yar Y pp 7

pp A n r^u ur o Com^u or^u r n n D^u r B^u
n r G C C n r^u An n ro^u on n C^u y pr n r
r^u on on pp 7

n ro^u on n pp Co p^u r^u Upper Com^u or^u
r n pr n r r^u on on pp 7

oo B E E oo G E r roo n ow n
u n u o Co p^u r^u Upper Com^u or^u r n n
pp Co p^u r^u Upper Com^u or^u r n pr n r r^u
on on pp

ro n pr n n r n An A o^u n o r n
r^u r^u r^u Ex r n^u pr n n on Co n n
n r^u C ne oo o Co n n Co p^u n n
n r o u

ro An r on B E no o o E^u or wo
C

ED w or r y or En D on n on y or n r
r y or

ro Door r n on or n p n B^u Boy
r^u e ne pp

Coop r^u on o^u Con n^u n n ro o n D n^u o
Co ur n p n n E^u r roo C C Coop r^u on or Con
pr n r r^u on on pp

A or D on o r or o o o r^u u e ne
pp

A 7 u^u An^u or o^u n C^u r^u n r r
C^u r^u

A Cor n B^u o u^u r^u r^u ro^u n or
ro ur n q^u r^u w ur r^u CA

A A Coop r^u p r A^u or n En ron n n ro EC
AC Con r n on p r y n o o D pp

A 7 n n u^u A on ro o u n n
Co ur^u on C^u r^u n r r^u C^u r^u

LIST OF APPENDICES

A. Further detail on empirical work:

A – *U.S. Quality of Life in the 1990s: A Cross-Country Comparison*

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Appendix B. Publications drawn on in thesis:

B – B. *U.S. Quality of Life in the 1990s: A Cross-Country Comparison*

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B – B. *U.S. Quality of Life in the 1990s: A Cross-Country Comparison*

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