Critical Realism and research on students' self-efficacy beliefs

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JALT conference

Kyoto, 6th November 2022

Aim and structure of the presentation

- **Aim:** to give a concrete and practical example of how CR can influence (and improve) research

- Report on a **quantitative** study on self-efficacy beliefs

  - What are self-efficacy beliefs and why are they important for learning?

  - Previous research on self-efficacy beliefs

  - Research design

  - Results

Aim and structure of the presentation

- Evaluation of the study based on CR philosophical assumptions

- Design of the qualitative study on self-efficacy beliefs based on CR

- Report on preliminary results of the qualitative study

Linking back to Jeremie's talk

- Research is always based on assumptions about our objects of inquiry, the variables in our studies, the data gathering/analysis methods we select, and what constitutes valid scientific knowledge.

- By making these assumptions explicit, we can overcome limitations in our work

Some aspects of Critical Realism (CR)

- A philosophy of science, including social science

- An alternative to empiricism/positivism and interpretivism/postmodernism

- Key assumptions:

  – **structure and agency**

  – **reality as stratified, multidimensional and open**

  – **emergence**

  – **the *real*, the *actual* and the *empirical***

  – epistemic relativism

  – ontological realism

  – judgemental rationality

Zotzmann, K. & Sheldrake (2021). Postgraduate students' beliefs about and confidence for academic writing in the field of applied linguistics. *Journal of Second Language Writing.* 52, 2-15.

Motivation for the study:

- Concern about **non-UK ('international') students** at UK universities in the field of Applied Linguistics/TESOL

- Assessment genres differ widely within and across academic disciplines, as well as between levels of education and (national) education systems

- Clarifying the implications of different beliefs and expectations could help to provide more guidance on academic writing

- As I am a qualitative researcher, I wanted to try out quantitative research

CR versus postmodern/poststructuralist perspectives

Our study: Concern about **non-UK ('international') students** at UK universities in the field of Applied Linguistics/TESOL

Postmodernists and poststructuralists: The idea that individuals categorized into groups such as 'home/international' students or 'native/non-native' speakers have more in common with other 'in-group' members than with members of the 'out-group' is regarded as unjustified, as essentializing and as homogenizing people based on their citizenship or national belonging (Jenkins 2011; Turner 2011 and many others)

We did not assume that 'international students' are more alike and more different from 'home students.'. Neither did we want to make spurious claims as to whether international students face *more or less* challenges or are *more or less* resourceful than others.

We are nevertheless concerned about the strong emphasis on identity, negotiability, and fluidity of boundaries in postmodern and poststructuralist research and the concomitant marginalization of structures, power relations, and causal effects.

- In addition to this: While postmodern and poststructuralist approaches rightly so reject the idea of 'deficiency' of 'international students', they often flip to the other extreme and argue that 'international students' or 'ELF speakers' are **all competent users** (not learners) of English.

- Students (international or otherwise) are commonly not in a position where they can, or are allowed to, negotiate and change assessment practices or criteria.

CR: Structure and agency

All international students (UK university system, different assessment genres) who are for the first time in the UK went through a transition process between structures:

- from one educational level to the next,

- from one educational system like China or Saudi Arabia to the UK,

- from one set of assessment genres to another

- from studying in their first language to studying in English

Linking back to Jeremie's talk

- **Interpretivist** sociolinguists also **tend to reject the ontological properties of languages** (e.g., English, Japanese, French, German, etc.), by assuming that meaning does not exist prior to people actually using language (e.g., meaning does not exist in books, dictionaries and other cultural resources) (see Weedon, 1987).

- **This leads to the problematic notion that human agents can communicate – and create their worlds – entirely 'from scratch,' without considering structural and cultural constraints and enablements, including those provided by language.**

What are self-efficacy beliefs?

Perceived self-efficacy is defined as people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives. **Self efficacy beliefs determine how people feel, think, motivate themselves and behave**. (Bandura 1994)

Why are self-efficacy beliefs important for learning?

Theory of learning: students' confidence within their studies are causally effective:

- **higher confidence** may facilitate people to apply even more effort, to set challenging goals, and to surpass their normal performance

- conversely, **lower levels of confidence**, and/or particular beliefs about academic writing, might be limiting or less helpful within higher education

Report on the quantitative study

Previous research on self-efficacy beliefs: Mostly quantitative (like ours) and empiricist: questionnaires and statistical analysis

Overall, 122 students (AL/TESOL) participated from across 17 universities

Questionnaire

1. Course grades

2. Course confidence

3. Confidence for academic writing

4. Familiarity and ease with assessment genres

5. Beliefs about academic writing

Beliefs about academic writing

Transmission (5 items)

- 'The key to successful writing is accurately reporting what authorities think',
- 'Good writers include a lot of quotes from authorities in their writing'

Transaction (7 items)

- 'Writing is a process involving a lot of emotion'
- 'Writing helps me understand better what I'm thinking about'

Recursion (5 items)

- 'Writing is a process of reviewing, revising, and rethinking'
- 'Good writing involves editing many times';

Including **audience orientation** (14 items)

- 'Good writers make complicated information clear'
- 'Good writers adapt their message to their readers'

and **elaboration** (3 items).

- 'Good academic writing involves combining and connecting information from different sources'
- 'Good academic writing involves extending ideas from existing literature';

These measures of *transmission*, *transaction, recursion,* and *audience orientation* are directly comparable with those used in prior research (Sanders-Reio, Alexander, Reio, & Newman, 2014; White & Bruning, 2005). The measure of *elaboration* was developed to supplement these, and was informed by contextualising and adapting prior items designed to measure aspects of elaboration within studying and learning in general (Pintrich, Smith, Garcia, & Wilbert, 1991).

Results of the study

- L2 students reported lower confidence and lower MA grades than L1 students

- L2 students reported less positive beliefs about effort/ability concerning writing

- L2 students reported higher beliefs that writing involved transmission

Conclusion

Overall, beliefs about effort/ability concerning writing and writing as a *transactional process to clarify ideas* could be inferred to be potentially beneficial, while beliefs about writing as *transmission* could be inferred to be potentially less beneficial.

Nevertheless, it remains difficult to conclude that other beliefs about academic writing are less relevant: even if they might not directly associate with students' confidence or grades, they might link with other aspects of studying.

Empiricism

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Empiricism

The goal of empiricist research is to **explain causality**

Key terms: correlation, inference, association (of X with Y).

What is empiricism?

David Hume (1711 – 1776)

- Empiricists claim that empirical evidence is the ultimate source of our knowledge.

- Knowledge about causality is created **only** through what is empirically available to us and what can be measured

- **A causes B** (e.g. smoking causes lung cancer) (successionism)

- **Theory of constant conjunction**: Elements that occur **frequently** and **regularly together** indicate that there is a causal relation between them

- These causal relations are conceptualised as universal laws

- Universal causal laws enable **prediction**

Empiricism as 'real' research

- 'Real research' is quantitative research including statistics

- 'Unity of science': the natural and the social world operate on the same principle and can be investigated by the same methods – 'the scientific method'

- Associated with objectivity

- Criteria for good research: reliability and validity

- Experiments, pre-and post tests, statistical analysis

Generative Second Language Acquisition

1.4 The scientific method in SLA research

The scientific method is a system of techniques for investigating natural phenomena, acquiring new knowledge, as well as correcting and integrating previous knowledge. To be termed scientific, a method of inquiry must be based on empirical and measurable evidence and subject to specific principles of reasoning. Generative linguistics uses the scientific method in investigating language and language acquisition. The method generally involves scrutinizing some data, making generalizations about patterns in the data, developing hypotheses that account for these generalizations, and testing the hypotheses against more data. Finally, the hypotheses are revised to account for any new findings and then tested again. Of course, there are adjustments one has to expect for the various scientific disciplines, and we will see how the method works in linguistics.

When describing a language that has not been described so far, linguists start by gathering some sentences from informants in the field who speak the language natively. Based on these preliminary data, they form hypotheses. To take an example from word order, one hypothesis can be that the subject in this language must precede the object and the verb. This is the case in many languages, so it is an informed hypothesis. Then linguists check this hypothesis against more data. Linguistic theory allows us to make predictions. Any theory or linguistic model worth its name should

Next, in order to test a prediction, we have to obtain quantifiable data, either longitudinally from a small number of learners over the course of their development, or cross-sectionally, from a larger number of experimental participants at one time. A control group of native speakers is obligatorily tested as well, in order to validate the test instrument. In some cases, the control group results also serve to support or refute various theoretical claims in the literature. If we want to be able to make claims about development with a cross-sectional design, we include learners at various levels of proficiency, say, beginner, intermediate, and advanced learners. In order to ascertain proficiency levels, it is customary to offer an independent test of language proficiency.

What does the quantitative study tell us? What are the limitations from a CR perspective?

Our study:

- Non-UK students have generally lower grades than the UK peers in PGR degree programmes

- They believe more often that writing is a transmission of information, not a transaction

But what are the causes?

Limitations:

- Correlations are not causality

- Correlations are patterns or **demi-regularities**: They can point us to potential causal configurations, but they can also mislead us

The qualitative research project based on CR

- Semi-structured interviews with international students at one university

- While they all encountered similar new structures (UK university system, different assessment genres) and they all went through a transition process (from one educational level to the next and from one educational system like China or Saudi Arabia to the UK), we found **wide ranging differences** between individual students

- This does not mean that they *do not* encounter similar structures and all undergo a transition process (in the literature the idea that 'international students' struggle more than 'home students' is highly criticized)

Student A (China): Writing as transmission

- failed most of her assignments,

- Over time **withdrew from social interaction with fellow students**

- **struggled with mental health issues**

- a year after her cohort graduated she resubmitted her assignments and was ultimately able to finish her degree

Student A (China): Writing as transmission

She characterized the exam system in China as being geared to 'objective questions' and 'multiple choices' 'based on the textbook you have learned'

> Even if though you didn't know well before but if you study hard in two or three days you can get a good mark.

She felt that the assessment system in the UK was decidedly different.

> I think when I come here most assignment is essays and … I can choose a topic I like and … sometimes I have to review some journals or books and sometimes just to do a little research xxxx [that] something … yeah I think essay have to have a critical thinking not just write what the book said.

Student A: Support from tutors

Most tutors explained the assignment 'very clearly first', but

> some of our tutors, maybe they thought we understand assignment so they didn't explain too much for us, so we sometimes we are confused about it, but we just ask our classmates to understand it

What exactly did the responsible tutors explain?

> Mmm … maybe the suggestion is not about the structure of the essay because [it] sometimes is flexible [for it] you can change it … and for the content tutors explained very clearly and gave us some advices … to find some resources and sometimes they gave us some … reading list and maybe you can use it in your own work.

Student A (China): Criticality

A: I think I can express my sometimes I can express my own opinion and not just write down what I have recited or remembered in the mind. Assessment is flexible.

K: Yeah. So at the beginning you're saying you had difficulties because it was too open yeah?

C: Yeah @ ..

Student A: Seeking support from others

She explains that she and her Chinese classmates prefer to clarify questions among themselves, mostly through a chat group, and only occasionally ask students from other nationalities.

Student A: investment of time

Yeah, maybe it depends on the length of the essay – if less than 2000 words maybe two days for me because I'm very LAZY sometimes, I just read some books and journals and let it go @. And after several days before the deadline I will start to write it.

Student A and the results of our quantitative study

- She believed that academic writing involves transmission, not transaction, recursion or elaboration.
- She was not familiar with assessment genres and felt there were no clear instruction by tutors
- Low grades
- Low confidence
- Social withdrawal (an effect that becomes a cause)

Student A and the results of our quantitative study

BUT

- In empiricists research the individual 'disappears' ('I'm very LAZY sometimes')
- The phenomenon is so complex that neither the variables nor the exact relationship between the variables is fully definable
- the study of factors or variables are certainly relevant to our understanding of the self efficacy beliefs but it draws attention away from differences between individual personalities.
- quantitative research does not seem to tell the whole story, it necessarily ignores the characteristics and details of the context, multiple configurations and the fact that causal arrows do not always point in one direction

Student C: academic writing from transmission to transaction

Student C was an excellent student in his home country (Middle East). He reports that there was a notable difference between the assessment he had encountered in in his home context and the one in the UK.

> I think yes it was a big difference for me. Back home we have [XXXXX] assessment so I'm used to exams actually. I have to study a lot and go to the exams and just…I would face exactly what I have studied in the books

He is ambitious and receives grades at the merit and later at the distinction level. As he reports, though.

Well I would say that this was one of the problems, because I have to write in English and everything must sound academic and convincing and it has to be arranged and revised many times. So it was difficult.

… some assessments were not that clear. Even when we have meetings with the professor and we get to ask him many questions I would say that the professors would always try to be general and wouldn't give much details, because giving details would count him responsible for everything he would say.

the first assignment I did when I came here. It was analysis of classroom language @@@@. So I had NO IDEA how to do it.

I spent the whole semester thinking about how should I do it. […] **I have a lot of friends** so if call them I will ask for some students' writing it's helpful, they have been sending me a lot of writing through e-mail, but I have been looking for other of my friends and they don't have that privilege.

So my friends I talked to some of them I would say…No…they were just like. They didn't help. I mean having to discuss with each other it just doesn't help**. I have only help with the students who is doing PhD. So I would go to the PGR room and I would talk to them** – some of them were doing the modules with me and some of them had already done the modules. So they would help, but **Masters students I would say they were all alike. They are just confused and still looking for more information and things like that**

Student D

A highly successful student who achieved high grades right from the beginning of her MA degree in the UK. She is also a successful team-player and shows that successful performance is partly based on generating and activating networks of fellow students, colleagues, mentors, and proofreaders who help with advice and resources. She also had background knowledge about genres:

> Well when we talked for one session we talked about genres, and when he told us what genres are it was like ahh OKAY! now I understand what it is! And…yeah so I was aware that there are different types – that they're really – that the same type differs a lot in different language contexts [different] cultural contexts but [we knew that] really explicitly.

Limitations empiricism from a CR perspective

- Statistics and correlation analysis is 'real research' whereas qualitative research is 'soft' and 'subjective': Statistics is just one among many ways of constructing knowledge about the world and it depends on your project whether it is useful and relevant

- 'Measuring' and 'numbers' are 'real research': Numbers do not explain anything by themselves – you need a theory that explains causal relationships.

Do we end up with just individual cases?

- **No:** It was important for us to do a quantitative analysis to find out that non-UK students indeed struggle with academic writing and have lower grades.

- **No:** It was important to find out that one of the issues was that (some) student held beliefs about academic writing as purely the transmission of ideas.

Porpora (2015): Do realists run regressions?

According to CR, causal analysis proceeds at three different levels.

1. the identification and description of causal mechanisms and causal powers;

2. second is the invocation of those causal mechanisms and causal powers in narrative accounts of contingent, causal conjunctures. Narrative, not regression equations, is, according to CR, the canonical form of causal explanation – not just in the social sciences but in all open systems, including physics.

3. The final level at which causal analysis proceeds is the methodological adjudication among rival explanations and narratives. Just because we offer an explanation or narrative does not mean it is the right one. There may be better explanations or narratives. At this level, recapturing a fractured unity, CR embraces methodological pluralism. (ethnographic description, statistical correlations, and narrative explanation etc.)

Going back to the beginning:

Our motivation for this study: Concern about some students who were disoriented and distressed

Many thanks for listening!

Questions or comments?

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Questionnaire

Self-efficacy and writing assignments in English in Applied Linguistics

- How do you think you have been doing in your assignments in your MA programme in the first semester?
- What grades did you get in your assignments in the first semester?
- How do you think you have been doing in the second semester?
- What grades did you get in your assignments in the first semester?
- How do you think you will be doing in your dissertation?

Questionnaire

The assignments I have experienced at undergraduate level in my home country and in my MA programme in the UK are different/ similar/ the same (please explain)

- I find these particular assignments in my MA programme particularly difficult
  - Essay/assignment with a give topic
  - An essay/assignment on a topic of your choice
  - Critical review of an article
  - Book review
  - Analysis of a transcript
  - Evaluation of a curriculum or a textbook
  - Other (please name)
- What is it that you find particularly difficult?
- Would clearer assessment guidelines have helped you?
- Would an example of a good assignment have been helpful?
- What else might have helped you?

Questionnaire

Self-efficacy and writing assignments in English in Applied Linguistics

How confident do you feel about being able to do one of the following? Very Confident = 1; Confident = 2; Average = 3; Not So Confident = 4; Not confident at all = 5

- I feel confident in my ability to clearly express my ideas in academic writing in my first language
- I feel confident in my ability to clearly express my ideas in academic writing in English
- I start to feel stressed-out as soon as I begin my assignments
- My mind goes blank and I am unable to think clearly when doing my assignments
- I often worry that I will get poor grades in my assignments
- I always know what a good assignment in my MA programme is supposed to look like

Questionnaire

How confident do you feel about being able to do one of the following in either English or your native language? Very Confident = 1; Confident = 2; Average = 3; Not So Confident = 4; Not confident at all = 5

- Identify the purpose of a text, including analysing and evaluating how a writer structures and organises ideas to shape meaning for particular audiences and readers

- Compare texts, for example looking at style, theme, and language, and exploring connections and contrasts

- Use a clear structure and paragraphs to develop and organise the meaning of your writing

- Select, summarise and synthesise information from different texts and use it to form your own ideas, arguments, and opinions

- Write concisely, logically, and persuasively, such as when presenting information and ideas on complex subjects

- Relate texts to their social and historical contexts and to wider literary traditions

- Recognise and evaluate the ways in which texts may be interpreted differently according to the perspective of the reader

- Analyse and evaluate writers' use of language, such as commenting on how texts are crafted to shape meaning and to produce particular effects

- Adapt your writing style and language to a wide range of forms, contexts, and purposes

- Use a wide variety of sentence structures to support the purpose of your writing, such as to give clarity and emphasis and to create specific effects, and to extend, link and develop ideas

- Use planning, drafting, editing, proof-reading, and self-evaluation to revise and craft your writing

- Do you think students will feel that these two questions are different from each other?

- Not sure if this is the right word here