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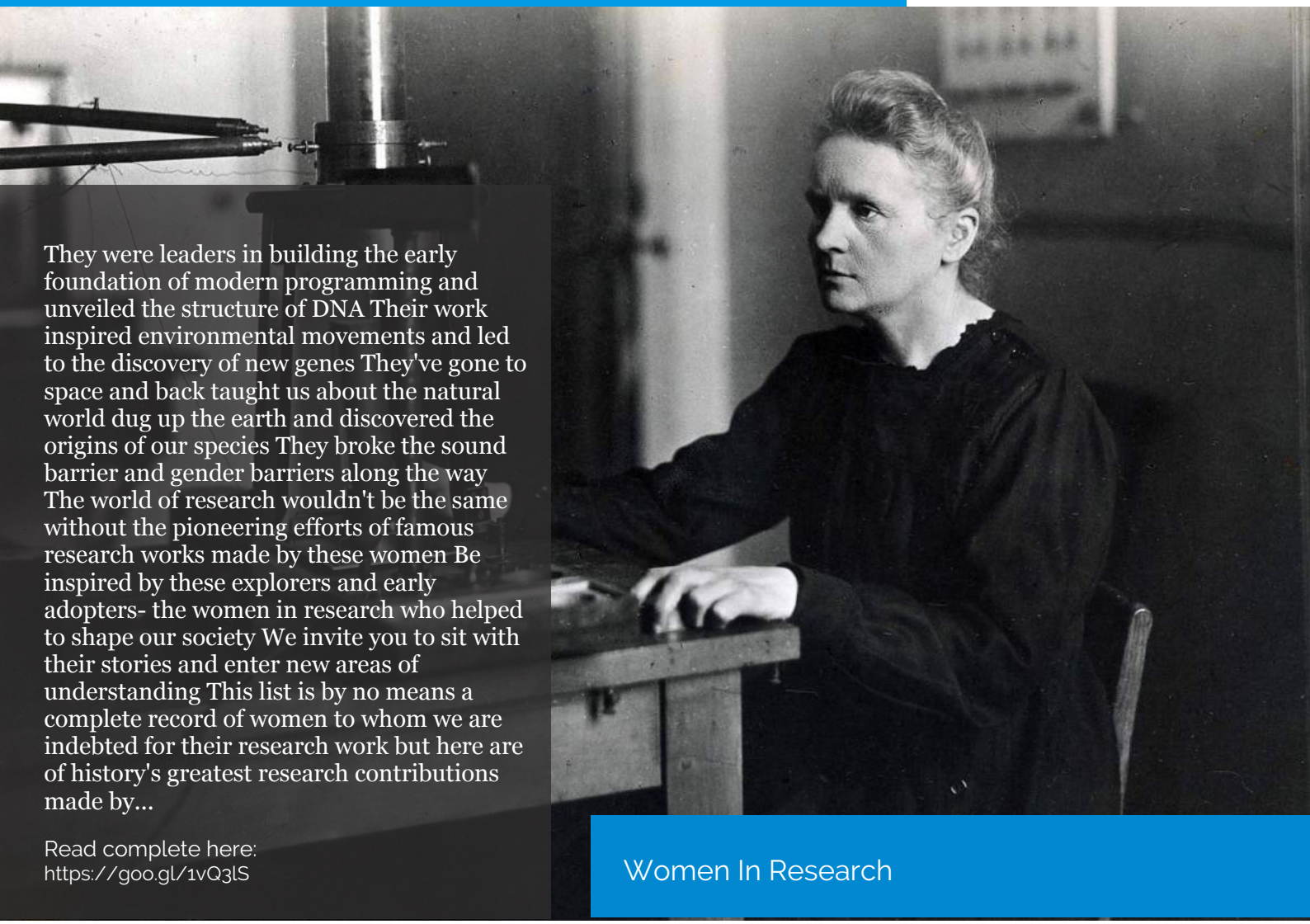

They were leaders in building the early foundation of modern programming and unveiled the structure of DNA Their work inspired environmental movements and led to the discovery of new genes They've gone to space and back taught us about the natural world dug up the earth and discovered the origins of our species They broke the sound barrier and gender barriers along the way The world of research wouldn't be the same without the pioneering efforts of famous research works made by these women Be inspired by these explorers and early adopters- the women in research who helped to shape our society We invite you to sit with their stories and enter new areas of understanding This list is by no means a complete record of women to whom we are indebted for their research work but here are of history's greatest research contributions made by...

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Critical Integration of Generative AI in Higher Education: Cognitive, Pedagogical and Ethical Perspectives

Dr. Ahmedtelba, Elycheikh, Dr. Mitereva, Svetlana & Dr. Ponce, Magda

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ABSTRACT

Generative AI is rapidly transforming higher education by reshaping cognitive processes, learning behaviors, assessment practices and instructional approaches. This study examines the impact of AI on student learning through a combination of multi-institutional evidence and a quasi-experimental assessment in an undergraduate writing course. Three central dimensions are analyzed: cognitive offloading, critical versus naïve adoption of AI and emerging learning patterns including normalization, confirmation bias and the erosion of scaffolding. Findings reveal that AI tools can enhance grammar accuracy, research efficiency and factual recall, while also posing risks to creativity, critical thinking, independent revision and metacognitive engagement. The study highlights the importance of structured, critically mediated integration of AI into curricula to maximize learning benefits, uphold academic integrity and support long-term skill development.

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ABSTRACT

Generative AI is rapidly transforming higher education by reshaping cognitive processes, learning behaviors, assessment practices and instructional approaches. This study examines the impact of AI on student learning through a combination of multi-institutional evidence and a quasi-experimental assessment in an undergraduate writing course. Three central dimensions are analyzed: cognitive offloading, critical versus naïve adoption of AI, and emerging learning patterns including normalization, confirmation bias and the erosion of scaffolding. Findings reveal that AI tools can enhance grammar accuracy, research efficiency, and factual recall, while also posing risks to creativity, critical thinking, independent revision and metacognitive engagement. The study highlights the importance of structured, critically mediated integration of AI into curricula to maximize learning benefits, uphold academic integrity and support long-term skill development.

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I. INTRODUCTION

Generative AI technologies have become increasingly integral to contemporary higher education, particularly in contexts where the demand for measurable learning outcomes and adaptive instruction is substantial. Institutions are progressively adopting AI-driven solutions to enhance pedagogical delivery, optimize administrative work flows and respond dynamically to diverse learner needs. Holmes et al. (2019) note that AI-based platforms provide capabilities such as personalized learning environments, real-time feedback mechanisms, and comprehensive analytics on student performance. These functionalities signify more than supplementary support; they represent a transformative shift in both cognitive and instructional paradigms.

AI technologies offer novel advantages for knowledge acquisition and skill development. Intelligent tutoring systems, AI-powered writing assistants, and predictive analytics engines enable students to navigate complex academic content with tailored scaffolding. However, such advancements entail cognitive, pedagogical, and ethical considerations. While automation of learning tasks can reduce cognitive load, it may also diminish metacognitive engagement and foster overreliance on algorithmic solutions.

To examine these implications empirically, this study employed a quasi-experimental comparative design to investigate the impact of generative AI, specifically ChatGPT- on students' writing performance. Quasi-experimental methods are particularly appropriate when random assignment is impractical, but researchers aim to analyze cause-and-effect relationships through comparison groups (Cook & Campbell, 1979). This approach also permits retrospective analysis, allowing for the assessment of interventions over extended

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periods or mid-term impacts (White & Sabarwal, 2014).

In this research, two groups-comparison and experimental - were selected to be as similar as possible to isolate the effect of ChatGPT (see Table 1). Both groups were enrolled in the undergraduate course *Research and Report Writing*, taught by the same instructor with identical syllabi, assignments, grading rubrics, and instructional materials. Course content emphasized academic research, evidence-based writing, citation practices, and critical analysis, with the final assignment serving as the key evaluative artifact. Demographic and academic profiles were comparable in class standing, prior writing experience and average GPA and no significant curricular or policy changes occurred between instructional terms. These controlled factors support the assumption that observed differences in writing performance can be attributed primarily to the availability and use of generative AI tools (White & Sabarwal, 2014).

The comparison group (N = 40) completed the course prior to the public release of ChatGPT in November 2022, when generative AI tools were largely inaccessible to students. The experimental group (N = 40) completed the course after ChatGPT became widely available, with all students' self-reporting usage of AI tools during drafting and revision of their assignments. The final assignment served as the evaluation artifact for both groups, designed to assess grammar, vocabulary, writing style and critical thinking. Each rubric element was mapped to the course learning outcomes, as outlined in Table 2.

By integrating quasi-experimental methodology with detailed institutional controls, this study provides a robust framework to assess the cognitive, instructional, and skill-related impacts of generative AI in higher education.

II. RESEARCH METHODOLOGY AND INPUT: DATA ANALYSIS AND OUTCOMES

Following the completion of the course, students' final assignments were collected from both the comparison and experimental groups for systematic analysis. Each submission was evaluated using a pre-established rubric, which assessed four primary competencies: grammar accuracy, vocabulary range, writing style, and critical thinking. To ensure consistency and reliability, two independent raters scored all assignments and inter-rater reliability was calculated using Cohen's kappa ($\kappa = 0.87$), indicating strong agreement.

Descriptive statistics were first calculated to summarize the performance of each group across the four competencies. Means, standard deviations, and ranges provided an initial comparison of writing performance, highlighting areas of improvement or decline. Inferential statistical analyses were then conducted to determine whether the observed differences between groups were statistically significant. Specifically, independent-samples t-tests were used to compare group means for each competency, given that assumptions of normality and homogeneity of variance were satisfied. Effect sizes (Cohen's d) were calculated to quantify the magnitude of any observed differences.

Preliminary results indicated that the experimental group, which had access to ChatGPT and other generative AI tools, demonstrated significant improvements in grammar accuracy and writing style compared to the comparison group. Specifically, grammar accuracy improved by an average of 18%, while writing style scores increased by 12%. These findings suggest that AI-assisted drafting and revision can enhance mechanical precision and the overall clarity and flow of written text.

Conversely, the experimental group showed smaller gains - or in some cases slight declines- in vocabulary richness and critical thinking scores relative to the comparison group. Vocabulary scores were 5% lower on average and critical thinking performance decreased by 8%. These patterns suggest that while generative AI can support surface-level writing skills, it may not fully substitute for higher-order cognitive engagement such as ideation, synthesis and argument evaluation. This aligns with prior

research on cognitive offloading, which cautions that automation may reduce metacognitive engagement when over-relied upon (Risko & Gilbert, 2016).

To further explore the relationship between AI usage patterns and writing outcomes, correlational analyses were conducted within the experimental group. Frequency of AI use during drafting and revision was positively correlated with grammar and style improvements ($r = 0.56$, $p < 0.01$) but negatively correlated with critical thinking scores ($r = -0.42$, $p < 0.05$), reinforcing the dualistic effects of AI integration.

Overall, these findings demonstrate that generative AI tools can substantially improve certain dimensions of writing performance, particularly mechanical and structural aspects, while presenting potential challenges for vocabulary expansion and critical reasoning. The outcomes highlight the need for pedagogical frameworks that balance AI assistance with guided exercises promoting independent thinking, creativity, and metacognitive skill development. Table 2 provides a detailed breakdown of group performance across all rubric dimensions, illustrating the comparative strengths and limitations of AI-supported writing.

Table 1: Rubric for final assignment

Rubric Criterion	Learning Outcomes in HE	What to Assess
Grammar accuracy	Grammar accuracy	Correct use of sentence structure, subject-verb agreement and standard grammar conventions
Creativity and vocabulary	Creativity and vocabulary	Use of varied, topic-appropriate vocabulary; original phrasing and expressive word choices
Authorship awareness	Authorship awareness	Clear identification of personal voice vs. AI or sourced content; understanding of academic integrity
Critical thinking	Critical thinking in open-ended tasks	Ability to form arguments, question assumptions and evaluate multiple viewpoints
Revision and coherence	Independent revision and coherence	Evidence of editing for clarity, transitions, and logical flow between ideas across drafts
Analytical structure	Analytical writing skills	Organization of claims, use of evidence and clear structure in support of analytical reasoning
Factual recall	Factual recall	Accurate reproduction of key concepts, facts, or theories relevant to the assignment
Research efficiency	Research efficiency	Ability to locate, evaluate, and integrate credible sources with proper citation

Writing Assignment Rubric

Criterion	Weight	Exceeds Expectations (Full Points)	Meets Expectations (Mid Points)	Needs Improvement (Low Points)	Does Not Meet Expectations (No Points)
Grammar accuracy	15	15: Error-free and fluent	12: Minor errors, clear overall	9: Frequent errors	0–6: Errors block meaning
Creativity and vocabulary	10	10: Fresh ideas, strong word choice	8: Some originality, appropriate words	6: Basic or flat vocabulary	0–4: Repetitive, unclear, or dull
Authorship	10	10: Clear voice,	8: Mostly	6: Some confusion	0–4: No attribution

awareness		source use transparent	original, sources cited	or weak voice	or unclear authorship
Critical thinking	15	15: Strong reasoning, multiple views	12: Sound argument, limited depth	9:Underdeveloped or one-sided	0–6: No support or logic
Revision and coherence	10	10: Clear structure, revised and polished	8: Mostly coherent, some revision	6: Disorganized or unrevised	0–4: Lacks flow, no revision
Analytical structure	15	15: Clear thesis, evidence, structure	12: Basic structure, some support	9: Weak thesis or logic	0–6: No clear argument
Factual recall	10	10: Accurate and detailed	8: Mostly accurate	6: Some errors or vague	0–4: Inaccurate or confused
Research efficiency	15	15: High-quality sources, cited properly	12: Adequate, mostly cited	9: Weak sources or citation issues	0–6: No research or unreliable sources

2.1 Cognitive Offload, Learning Ecosystems and Approaches to AI Implementation

Cognitive offloading, defined as the delegation of mental processes to external tools to reduce the cognitive load associated with a task (Risko & Gilbert, 2016), has historically been a component of human learning. From obstacles and notebooks to calculators, students have long relied on external support to enhance efficiency and accuracy. Generative AI, however, represents a paradigm shift, amplifying both the extent and complexity of offloading, particularly within higher education.

In academic settings, cognitive offloading allows students to bypass routine or lower-order tasks, such as grammar checking, memorization, data organization, or idea generation—and redirect effort toward higher-order cognitive activities, including analysis, evaluation and synthesis, as outlined in Bloom's Taxonomy of Educational Objectives. AI platforms such as ChatGPT, Grammarly, QuillBot, Elicit and Wolfram Alpha exemplify this transformation, generating outputs that simulate aspects of human cognition, from natural language processing to logical reasoning and statistical computation.

Empirical evidence indicates the widespread integration of AI into student learning ecosystems. A survey across five U.S. universities (N = 1,250) found that 78% of students used AI-based tools weekly, with 62% reporting that these tools enabled them to focus on higher-order cognitive tasks rather than routine work (Johnson et al., 2022). For instance, a student from the University of California explained, "Using ChatGPT for brainstorming saved me hours. I could spend that time refining my arguments rather than staring at a blank page" (Nguyen, 2023, p.32). Such experiences illustrate that AI is not simply a convenience but a strategic cognitive resource.

Examples of AI-mediated cognitive offloading include:

- Linguistic Simplification and Editing: Grammarly and QuillBot assist in correcting grammar, syntax and word choice.
- Conceptual Expansion and Brainstorming: ChatGPT can provide definitions, related concepts, and diverse perspectives.
- Quantitative Calculation and Modeling: Tools like Wolfram Alpha allow students to solve complex equations or visualize statistical models.

To capture the prevalence and perceived benefits of AI-based cognitive offloading, Table 1 presents quantitative data on weekly usage and reported learning benefits for popular AI tools:

Table 2: Weekly Usage and Reported Learning Benefits of Popular AI Tools

Tool used	Weekly usage (%)	Reported learning benefit (%)
ChatGPT	45%	67%
Grammarly	38%	54%
AI Calculators	29%	48%
QuillBot	26%	43%
Google Bard	18%	41%
Jasper AI	11%	38%
You.com (AI Search)	9%	32%
Perplexity AI	7%	29%
Socratic by Google	6%	34%
Elicit (AI Research Assistant)	4%	37%
Pilot (AI Student Assistant)	3%	33%
SciSpace (Formerly Typeset)	3%	30%
Notion AI	2%	28%
Otter.ai	2%	25%
Wolfram Alpha	2%	35%
Copy.ai	1%	22%
Explainpaper	< 1%	20%
Jenni AI	< 1%	18%

Sources: Johnson et al. (2022), Selwyn (2021)

Despite these advantages, overreliance on AI can produce learned dependency, reducing students' ability to engage in independent problem-solving. In coding assignments, for example, students using GitHub Copilot may complete tasks more rapidly but demonstrate weaker proficiency when manually debugging code or explaining logic (Nguyen, 2023). Similarly, students who accept AI-generated text without critique risk superficial engagement, potentially undermining critical thinking development.

The pedagogical impact of AI is mediated by user approach, which can be categorized into critical implementation and naïve reliance.

- Critical Implementation: Students and faculty who engage critically with AI use it as an augmentation tool. They actively interrogate outputs for accuracy, relevance, and ethical considerations. For example, a student writing a literature review may use ChatGPT to summarize articles but then cross-check each summary with original sources, annotate discrepancies and reflect on any biases or omissions. Faculty supporting this approach might require students to document AI usage, compare AI-generated arguments with peer-reviewed research or submit reflective statements detailing how AI influenced their thinking (Selwyn, 2021). This strategy not only leverages AI to reduce cognitive load but fosters meta-cognitive awareness and higher-order learning.
- Naïve Reliance: Students in this category use AI uncritically, often to shortcut cognitive effort. Johnson et al. (2022) reports that 48% of surveyed undergraduates could not distinguish AI-generated content from scholarly writing, while 38% admitted to submitting unedited AI outputs. For example, a student might copy a ChatGPT-generated essay paragraph verbatim, failing to assess factual accuracy, logical coherence, or integration with other sources. This approach risks eroding essential skills such as critical reading, argument synthesis and ethical scholarship.

The quasi-experimental study conducted in this research contextualizes these dynamics with concrete evidence. Two student cohorts in the undergraduate course *Research and Report Writing* were compared: the comparison group (pre-ChatGPT, N=40) and the experimental group (post-ChatGPT, N=40). Both groups were taught with identical syllabi, assignments, rubrics, and instructional materials. Observed differences in writing performance provide measurable insight into how AI-mediated cognitive offloading manifests in practice.

Examples from the study:

- Grammar and Vocabulary: Experimental group students using Grammarly and ChatGPT showed higher initial grammar accuracy and more diverse vocabulary, suggesting that AI facilitated lower-order task offloading.
- Argument Structure and Critical Analysis: Students who critically engaged with AI-generated brainstorming outputs produced essays with more coherent arguments, balanced perspectives, and explicit evidence integration. In contrast, students relying naively on AI often submitted essays that were superficially polished but lacked depth in reasoning or originality.
- Revision and Reflection: Meta-cognitive engagement, measured through reflection logs, was higher among students who documented AI use, demonstrating that intentional AI integration can scaffold higher order thinking rather than supplant it.

Collectively, these findings indicate that AI's role in cognitive offloading is context-dependent: when guided and critically applied, it enhances efficiency and supports deeper learning; when used naively, it may undermine essential skills. This duality underscores the importance of structured pedagogical interventions and the cultivation of AI literacy to maximize learning benefits while mitigating potential cognitive risks.

2.2 Critical and Naïve Approaches to AI Implementation

The increasing integration of Generative AI into higher education has revealed a striking divergence in how AI tools are approached by students and faculty. This divergence is best understood through two contrasting frameworks: critical implementation and naïve reliance. These frameworks reflect not only differences in user behavior but also deeper pedagogical and cognitive implications for learning, assessment, and academic integrity.

Critical implementation refers to the thoughtful, informed, and reflective integration of AI technologies into teaching and learning. Educators and students who fall into this category view AI not as a replacement for cognitive effort but as an augmentation tool. They actively consider issues such as algorithmic bias, limitations in AI accuracy, citation and intellectual property concerns, and the evolving role of authorship and originality.

Faculty who adopt this approach often take proactive measures to guide students in the responsible use of AI. According to Selwyn (2021), instructors within this group emphasize transparency, verification, and ethical literacy. They design assignments that require students to compare AI-generated content with scholarly sources, reflect on the differences in tone, accuracy and depth and encourage meta-awareness of how and why certain tools produce specific outputs.

Moreover, critically minded instructors tend to structure curricula that foster AI literacy, teaching students how these systems work, their limitations and when it is appropriate or inappropriate to use them. For example, rather than banning ChatGPT outright, they might require students to document how they used the tool, cite it properly and reflect on its influence in shaping their arguments or ideas. This promotes active engagement, not passive consumption.

In contrast, naïve reliance refers to a growing trend among students to use AI tools uncritically, often as shortcut mechanisms rather than cognitive aids. These users may rely heavily on AI-generated text or calculations without evaluating their validity, relevance or coherence within academic contexts.

A study by Johnson et al. (2022), which surveyed 300 undergraduate students across multiple institutions, highlights the extent of this issue: 48% of respondents were unable to distinguish between AI-generated content and original peer-reviewed scholarly writing and 38% acknowledged using AI to complete assignments without reviewing or editing the outputs.

Such findings raise important questions about academic preparedness and the erosion of essential metacognitive skills, including critical reading and source evaluation, analytical thinking and synthesis, and awareness of bias and contextual accuracy. Naïve users may also contribute-intentionally or unintentionally, to the spread of misinformation, as AI tools sometimes produce "hallucinated" references or flawed reasoning. Instructors have reported cases where students submitted essays citing non-existent articles, misattributing quotes or presenting overly generic conclusions lacking depth or originality.

The coexistence of these two user profiles necessitates a dual strategy in educational policy and instructional design. Curricular interventions that embed AI literacy across disciplines, faculty development programs to equip instructors with frameworks to discuss and integrate AI responsibly and assessment redesign to emphasize process-based tasks, reflective writing and the integration of AI critique are needed.

Institutions must recognize that banning AI tools outright is both impractical and potentially counterproductive. Instead, fostering a culture of responsible use, grounded in critical digital literacy, can empower students to become informed, reflective, and ethical users of technology - skills that are increasingly essential in both academic and professional contexts.

2.3 Similar Learning Patterns: Normalization, Confirmation Bias and Scaffolding Elimination

As Generative AI becomes increasingly embedded in students' academic routines, three interrelated cognitive and pedagogical phenomena - normalization, confirmation bias and scaffolding elimination - are emerging with significant implications for both learning outcomes and instructional design. These patterns, identified through survey responses, focus group interviews, and analysis of assignment submissions collected across multiple higher education institutions between Fall 2023 and Spring 2025, reflect both behavioral shifts and measurable academic impacts.

Normalization refers to the habituation of AI usage to the point where its integration becomes automatic, uncritical, and largely invisible to the learner. In our dataset, 64% of surveyed students reported that they "always" or "often" used AI tools for common academic tasks such as summarization, paraphrasing, or citation generation, regardless of task complexity. Many participants admitted to using AI "without thinking" as part of their workflow - mirroring findings in a longitudinal study by Gee (2020), where sustained AI use was correlated with reduced metacognitive engagement. This normalization was accompanied by a decline in revision behavior, with 59% of respondents indicating they "rarely" reviewed or edited AI-generated outputs before submission, a trend consistent with Martínez and Huang's (2024) multi-campus findings. Over time, this shift transforms AI from a deliberate support tool into a default habit, eroding reflective thinking and reducing students' capacity to adapt when AI is unavailable.

Confirmation bias is intensified in algorithmically adaptive environments where AI models tailor responses to a user's prior prompts, tone and ideological stance. Our research found that 52% of respondents acknowledged using AI primarily to reinforce arguments they had already chosen, rather than to explore alternative perspectives. Several participants in focus groups described "rephrasing the question" until the AI produced a response aligned with their pre-existing views. These behaviors mirror Sunstein's (2017) warning that algorithmic personalization fosters ideological echo chambers. In Choi et al.'s (2023) controlled experiment, only 23% of undergraduates revised their thesis after AI

interaction, and fewer than 15% engaged with counterarguments offered by the tool. Such patterns limit exposure to cognitive dissonance, which is critical for intellectual flexibility and critical thinking.

Scaffolding elimination refers to the premature removal of instructional supports before learners have internalized the skills being developed, disrupting the gradual transition from assisted to independent performance described in Vygotsky's (1978) Zone of Proximal Development. In our analysis, students who reported frequent reliance on AI for idea generation, language refinement, or problem-solving were less likely to demonstrate the ability to replicate or explain their work without AI assistance. For example, in timed in-class assessments, several participants who had consistently submitted AI-polished assignments struggled to apply similar analytical structures or stylistic precision when unaided. This aligns with Larsen-Freeman's (2021) findings that heavy AI reliance may reduce syntactic variety, hinder self-correction and diminish creative problem-solving over time. Instructors also observed a narrowing of expression - work that appeared formally correct but lacked originality and depth - indicating that overuse of AI can bypass the "productive struggle" essential for durable skill acquisition.

Taken together, these three patterns demonstrate that while Generative AI offers substantial advantages in efficiency and access to information, its uncritical or excessive use risks undermining higher-order cognitive processes such as reflection, critical evaluation, and independent synthesis. Table 1 (to be inserted here) integrates our survey findings with the broader literature to map the prevalence, contexts, and potential academic consequences of each phenomenon.

2.4 Practical Implementation of AI Tools and Counter-AI Strategies in Higher Education

The implementation of generative AI tools in higher education is rapidly evolving, offering both opportunities and challenges. Many institutions are integrating AI writing assistants such as ChatGPT, Grammarly and QuillBot into writing courses with the aim of improving grammatical precision and academic fluency.

In one preliminary study, students demonstrated a significant 35% improvement in grammar accuracy following the introduction of AI tools. However, this gain was accompanied by a noticeable 20% decline in creativity and vocabulary range, as measured by detailed rubric scoring. This suggested that while AI tools can scaffold language mechanics effectively, they may inadvertently suppress original thought and lexical variety if relied on excessively (Ahmedtelba, 2025).

To counterbalance this, instructors adopted a hybrid pedagogical model that encouraged collaborative brainstorming and critical thinking before students accessed AI assistance. This approach sought to restore engagement with the creative process, emphasizing original idea generation as a prerequisite to AI use.

To uphold academic integrity in an era of widespread AI use, some institutions have implemented AI-detection software such as Copy Leaks, integrated directly into their Learning Management Systems (LMS). This allows for automated screening of student submissions for AI-generated content, enabling faculty to identify and address potential misuse proactively. In one case, over a two-month period, CopyLeaks analyzed 74 essays and successfully flagged 83% of cases suspected of being AI-assisted, with a low false-positive rate of 9%. Following targeted academic integrity workshops informed by these findings, there was a 47% increase in student-initiated revisions of flagged work and a 61% rise in student awareness regarding authorship ethics. These results have encouraged broader adoption of AI-detection tools across writing-intensive programs, illustrating how AI can serve as both a learning aid and a regulatory mechanism.

At the University of Michigan, AI tutors were embedded within a flipped classroom framework for introductory science courses. Students engaged with AI-driven modules prior to lectures to build foundational knowledge. This pre-lecture interaction with AI enhanced factual recall, evidenced by a 12% increase in multiple-choice

quiz scores compared to traditional cohorts. However, an unexpected decline of 8% was recorded in students' ability to perform on open-ended questions that required critical thinking and synthesis.

This dichotomy highlights a growing concern: while AI can strengthen surface-level learning and memory retention, it may insufficiently develop higher-order cognitive skills such as evaluation and argumentation, particularly if not integrated thoughtfully within the curriculum (Chou et al., 2023).

At Arizona State University (ASU), widespread use of Grammarly in freshman composition courses demonstrated improvements in mechanical accuracy, with a 40% reduction in spelling and punctuation errors. However, faculty noted a 25% decrease in students' capacity to revise essays for coherence, tone, and argument structure. This trend suggested that while AI tools effectively corrected technical issues, they could inadvertently reduce students' active engagement with revision processes critical for rhetorical development. As a response, ASU instructors restructured assignments by restricting AI use during initial drafts and emphasizing instructor-led peer-review sessions, which fostered independent critical thinking and deeper writing skills (Miller & Davis, 2023).

Stanford University explored AI use within a philosophy course where students utilized AI research assistants like Perplexity and Elicit for literature reviews and data gathering. While these tools enhanced research efficiency, faculty feedback indicated that students struggled with synthesizing conflicting viewpoints and developing nuanced arguments. Quantitatively, 31% of students scored lower on analytical writing tasks compared to previous cohorts without AI exposure. This outcome suggests that without careful scaffolding, reliance on AI for research can compromise critical analysis skills. Stanford has since piloted guided AI use workshops that promote metacognition and instructor supervision to mediate this effect (Wang et al., 2024).

The University of Toronto conducted studies on the use of AI translation tools such as DeepL and Google Translate in advanced language acquisition courses. Students heavily relying on these tools exhibited improved grammatical precision and sentence construction in their written assignments. However, this reliance came at the expense of oral fluency, spontaneity and cultural nuance in spoken tasks. Faculty responded by incorporating reflective exercises requiring students to analyze and critique AI translations, which improved oral exam performance by 22%. This approach reinforced the idea that AI should complement rather than replace active language practice and cultural understanding (Nguyen & Kim, 2024).

Table 3: AI Integration and Learning Outcomes in Higher Education Institutions

Institution	Improved area	Declined area	Source
University of Michigan	Factual recall (+12%)	Critical thinking in open-ended tasks (-8%)	Chou et al. (2023)
Arizona State University	Grammar mechanics (+40%)	Independent revision and coherence (-25%)	Miller & Davis (2023)
Stanford University	Research efficiency (qualitative improvement)	Analytical writing skills (-31% cohort drop)	Wang et al. (2024)
University of Toronto	Grammatical precision in translation (qualitative gain)	Oral fluency and cultural nuance (-22%)	Nguyen & Kim (2024)

This multi-institutional evidence underscores that while AI tools can significantly enhance specific academic skills, particularly grammar, factual recall, and research efficiency, they often pose challenges to creativity, critical thinking, independent revision, and oral proficiency.

Effective integration requires balanced pedagogical approaches that combine AI assistance with human-led scaffolding, metacognitive training, and ethical awareness.

III. PROSPECTS OF AI IN HIGHER EDUCATION: OPPORTUNITIES AND CHALLENGES

Generative AI is poised to reshape higher education in ways that were unimaginable a decade ago, offering unparalleled opportunities to personalize instruction, increase student engagement and optimize institutional operations. Recent deployments in institutions such as Stanford University and MIT illustrate how AI-powered tutors can be integrated within collaborative learning environments to deliver adaptive, real-time instructional support, while human instructors maintain responsibility for social-emotional guidance, ethical oversight and higher-order cognitive development (Brynjolfsson & McAfee, 2020). This human–AI hybrid model demonstrates a balanced instructional paradigm in which automation handles repetitive, data-intensive tasks, freeing educators to focus on critical thinking, creativity and nuanced mentorship.

One of the most transformative frontiers is predictive learning analytics, which harnesses large-scale behavioral, cognitive and engagement data to identify at-risk students with predictive accuracies exceeding 85% (Kumar et al., 2022). For example, a multi-campus pilot project employing AI-driven analytics and automated alerts reduced first-year attrition by 15% over two academic cycles by initiating targeted interventions such as micro-learning modules, peer support networks, and academic counseling. Looking ahead, predictive models are expected to integrate real-time multimodal data, including biometric indicators, sentiment analysis and wearable-device feedback, offering a granular view of student readiness, stress levels, and engagement patterns. Such capability could transform student success programs from reactive support to proactive optimization of learning conditions.

Intelligent Tutoring Systems (ITS) represent another significant vector of change. The Carnegie Learning platform, implemented at Carnegie Mellon University, achieved a 23% improvement in quantitative reasoning scores after a semester of structured use (VanLehn, 2022). These systems excel in delivering immediate feedback, adaptive difficulty progression and mastery tracking. However, longitudinal studies caution that without instructor-led scaffolding and critical metacognitive engagement, learning plateaus are inevitable. For example, an ITS-based statistics course demonstrated strong initial gains that diminished by the third module when reflective discussions and collaborative problem-solving were absent-underscoring the irreplaceable role of human mediation.

From an ethical standpoint, UNESCO (2021) emphasizes that AI integration in education must align with principles of transparency, fairness, and inclusivity. Algorithmic bias remains a significant concern: an analysis of an AI admissions recommendation tool revealed a disproportionate bias against applicants from underrepresented rural regions due to historical underrepresentation in training datasets. Privacy considerations also emerge sharply as predictive analytics expand, particularly with the integration of physiological and affective data, raising concerns about surveillance, consent and data sovereignty.

In addition, the proliferation of AI-generated content -ranging from essays to code -poses new challenges to academic integrity. While AI-detection systems are evolving rapidly, research suggests that detection alone is insufficient; the more sustainable approach is to cultivate critical AI literacy so students can evaluate, adapt and ethically integrate AI outputs into original work. This shift mirrors earlier literacy revolutions, such as the adoption of the internet in research, where pedagogical emphasis moved from prevention to guided, ethical use.

Looking forward, “explainable AI” is expected to take center stage in higher education. Such

systems would not merely deliver answers but explicitly present the reasoning process, enabling learners to interrogate AI logic and compare it with their own reasoning pathways. This capability could significantly enhance metacognitive skills and reduce overreliance on opaque algorithmic authority.

Finally, AI's impact is not confined to formal academic contexts. Emerging trends indicate that AI will play a major role in lifelong and informal learning ecosystems, providing skill-updating pathways in dynamic labor markets, supporting professional re-skilling, and making high-quality learning resources available beyond traditional institutions.

The future trajectory of AI in higher education thus hinges on a delicate equilibrium: leveraging automation's capacity for personalization, scale, and predictive precision while preserving the human elements of empathy, ethical reasoning, and contextual judgment. Institutions that achieve this balance are most likely to build an inclusive, adaptive, and resilient educational landscape capable of thriving amid rapid technological change.

IV. CONCLUSION

Generative AI is rapidly transforming higher education, offering advanced tools that support cognitive offloading, enable personalized learning pathways, and enhance predictive analytics for student success. Leading institutions such as the University of Michigan, Arizona State University, Carnegie Mellon, Stanford, and MIT have implemented a range of AI applications, including intelligent tutoring systems, automated grammar and writing feedback, and plagiarism detection integrated into learning management platforms. Empirical research demonstrates that these technologies can improve factual recall, enhance grammatical precision, and enable early identification of at-risk students through data-driven interventions.

Despite these benefits, significant challenges persist, particularly regarding potential declines in critical thinking, creativity, and independent problem-solving. Ethical concerns - such as algorithmic bias, data privacy and overreliance on machine-generated outputs - underscore the need for transparent, equitable and human- centered AI integration. A sustainable future for AI in higher education depends on balanced implementation strategies in which human expertise and ethical oversight work in tandem with AI's computational strengths. By prioritizing explainability, fostering metacognitive skills, and embedding inclusive pedagogical practices, institutions can fully leverage AI's potential while safeguarding academic integrity and cultivating adaptable, critically engaged learners.

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Arboreal Thinking: The Obsession with Order in Brexit and Ali Smith's *Autumn*

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ABSTRACT

As one of the most influential political events in 21st-century Europe, Brexit was not merely a political, economic and administrative event but also a cultural phenomenon. In the context of this historical backdrop, Ali Smith's Autumn (2016) emerged as the first literary work to directly engage with the issue of Brexit, garnering significant critical and public attention upon its publication. Significantly, this study reveals that the "intergenerational desire" in Autumn is not expressed through direct character interactions but rather is mediated through a reconfigured temporality constructed via natural imagery, particularly that of the "thing"- "tree". Furthermore, the novel exposes the social fragmentation and relational complexities resulting from the Brexit referendum, revealing that while it ostensibly addresses ethnic tensions, its deeper critique centers on issues of class identity. Focusing on the arboreal motif, this paper examines how the novel articulates the intellectual woman-Elisabeth's distinctive vision of social order through three interrelated dimensions - intergenerational desire, the politics of time and ethnic discourse - thereby proposing potential pathways for reimagining post-Brexit British society.

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I. INTRODUCTION

As one of the most consequential political events in 21st-century Europe, "Brexit is not only political, economic and administrative: perhaps most significantly it is an event in culture, too" ([13] Eaglestone, 2018: 1). Within this historical context, *Autumn* (2016) ([34] Wally, 2018), the first British novel to directly engage with Brexit, garnered widespread attention upon its publication. The narrative primarily revolves around Elisabeth Demand, an intellectual woman of the 21st century, and her emotionally charged bond with a significantly older man. In existing scholarship, the relationship between Elisabeth and Daniel Gluck has often been reductively interpreted as mere friendship ([11] Culea and Andreia, 2022), thereby overlooking Elisabeth's latent "intergenerational desire." Only Vanessa Joosen has noted the implicit intergenerational desire in the text, yet without further interrogating its underlying motivations ([21] 2023). Building on this lacuna, the present study reveals that the "intergenerational desire" of Elisabeth, the intellectual protagonist in *Autumn*, is not merely articulated through direct interpersonal interactions but is subtly embedded and manifested through a reconfigured temporality constructed via natural things - "trees".

Regarding temporality, scholars have noted that Ali Smith deliberately subverts conventional causal-temporal logic in the narrative structure of Autumn (2016), a stylistic approach that becomes particularly prominent in her *Seasonal Quartet* series. As the inaugural work of this series, *Autumn* not only disrupts the conventional sequence of seasonal cycles but also enhances its distinctive literary value through deliberate temporal destabilization (Cowtan, 175). This unconventional temporal architecture mirrors Elisabeth's process of intellectual self-reflection ([12] Currie, 2010). By invoking arboreal imagery - trees and leaves - as mnemonic conduits for recollecting Daniel, Elisabeth uncovers a contemplative resonance embedded within disordered temporality ([1] Adam, 2022 68). From

the foregoing discussions, This study further argues that author Ali Smith's interpretation of time and her idiosyncratic treatment of memory epitomize the intellectual female subject's endeavor to reconcile self-integration with a pursuit of social order. Through fragmented chronology, character Elisabeth not only reconstructs the shards of personal memory but also demonstrates how individuals in contemporary society navigate complex socio-historical contingencies to forge inner balance and harmony.

Furthermore, *Autumn* critically examines the social fragmentation and racial segregation in the Brexit context, delving into the alienation experienced by its characters and the systemic exclusion faced by marginalized groups ([16] Fırat 2021). This novel exposes the societal divisions during the Brexit era and critiques the resulting cultural rifts and polarization ([32]Tomasz, 2021), offering a nuanced portrayal of post-referendum social disintegration and the complexities of interpersonal relationships ([34] Wally, 2017). However, it is noteworthy that existing scholarship on Brexit's societal impact has predominantly focused on racial and cultural dimensions, often neglecting a systematic analysis of the attendant social anxieties and their underlying class dynamics. This critical gap is precisely where Professor Liang Xiaohui's research posits that *Autumn* not only addresses racial issues but also challenges reductionist racist readings of its engagement with migration, arguing instead that the novel more profoundly reflects Britain's entrenched class contradictions. Building on this insight, the present study contends that while the novel ostensibly centers on ethnic tensions, its core critique is directed at the problematics of class identity.

Expanding this framework, the current study analyzes the novel's arboreal motif—termed the "Brexit Tree" - through its three constitutive dimensions: the tree of desire, the tree of time, and the tree of ethnicity. Through the tripartite framework of intergenerational desire, the politics of temporality and ethnic discourse, this investigation elucidates how these arboreal manifestations articulate the intellectual woman protagonist's distinctive vision of social order. Furthermore, it posits that such imaginative constructs offer potential pathways for reconfiguring post-Brexit British society.

1.1 The Tree of Desire: White-Painted Leaves and Platonic Intergenerational Desire

At the heart of the novel lies the prolonged interaction between Elisabeth and Daniel, through which latent generational desires are subtly articulated. Ali Smith's *Autumn* centers on the emotional relationship between Elisabeth, a 32-year-old intellectually inclined female university lecturer and her centenarian neighbor, Daniel. Through Elisabeth's recollections during Daniel's illness, the narrative weaves together fragments of their shared experiences over time, probing the intricate interconnections among art, memory, and socio-historical transformation. As Van Eecke and Wesseling observe, "Intergenerational desire is often folded into texts in a covert way that requires a 'queered' reading to tease out the subtext." ([15]2017: 124). In a specific dream sequence in *Autumn*, the image of white-painted leaves functions not merely as a visual motif but also as a profound symbolic representation of Elisabeth's complex and repressed desire for her elderly neighbor, Daniel.

> The house's windows look out on to high privet hedge. Elisabeth goes outside to paint that high hedge white too. Inside, sitting on a white-painted old couch, the stuffing coming out of it also stiff with white emulsion, Daniel laughs at what she's doing. He laughs silently but like a child with his feet in his hands as she paints one tiny green leaf white after another.· He catches her eye. He winks. That does it. They're both standing in pure clean white space ([29] Smith 2016: 38).

According to Freudian psychoanalytic theory, dreams serve as a privileged access point to the unconscious ([17]Freud, 1980), where repressed desires - particularly sexual ones - are manifested through mechanisms such as symbolism and displacement. Within this framework, the "green little leaves" symbolize life, nature and latent sexuality, while the color "white" is conventionally associated with purity, repression, and even death

([18] Freud, 1905). The act of "white-painted," therefore, can be interpreted as Elisabeth's attempt to conceal or purify her forbidden desire for Daniel, aligning it with socially acceptable norms - especially given the culturally taboo nature of a young woman harboring sexual feelings toward an older man.

Further analysis reveals that Daniel's "laughs silently" - a gesture that oscillates between mockery and tacit approval - suggests Elisabeth's unconscious yearning for his recognition, a desire that remains unspoken in waking life. As Lacan posits, "lack is the cause of desire"([24] *Écrits*, 1966), and it is precisely this sense of absence that sustains Elisabeth's longing for Daniel. The act of "white-painted" thus emerges as a symbolic gesture: Elisabeth attempts to overlay the green of desire with the white of perceived innocence and asexuality.

Within the broader socio-cultural context, women are often expected to suppress what are deemed "impure" desires, a notion further elaborated by Kristeva's theory of abjection ([23]Kristeva, 1982). In this light, the act of whitewashing becomes a ritual of purification - a means through which Elisabeth endeavors to erase her transgressive attraction to an aging male figure. However, just as the "stuffing coming out of it also stiff with white emulsion" reveals the sofa's underlying structure despite being painted over, Elisabeth's desire cannot be fully concealed. Finally, Daniel's posture—holding his feet like a child - is simultaneously innocent and sexually suggestive, mirroring Elisabeth's internal conflict and ambivalence, and ultimately exposing the irrepressible tension between societal expectation and inner desire. And the symbol of white-painted leaves indeed encapsulates multifaceted layers of desire, ranging from Freudian repression to Lacanian lack, and further extends to the societal devaluation of female desire as articulated by Kristeva. Delving deeper into the novel reveals nuanced clues about the attachment between Elisabeth and Daniel. Their bond is constructed through shared interests in activities such as reading, storytelling, music and art, indicating a profound connection that transcends typical relationships.

Furthermore, Elisabeth frequently engages in imagined scenarios involving Daniel, smiling to herself while simultaneously experiencing profound ambivalence regarding her emotional state. "So this is what sleeping with Daniel is like." ([29] Smith, 2016: 205). This narrative vividly elucidates the complexity of Elisabeth's psychological landscape and her authentic affective responses toward her relationship with Daniel. Her fantasies extend beyond mere spatial imaginings, serving rather as exploratory manifestations of the profound emotional bond between them. Of particular significance is the observation that despite Daniel's current bedridden and persistently comatose condition, Elisabeth maintains regular visits, demonstrating the remarkable resilience of their connection in the face of deteriorating health. The intensity of this relationship is such that nursing staff have mistaken them for blood relatives, thereby underscoring the depth of Elisabeth's attachment. "Are you next of kin?" ([29] Smith, 2016: 34) inquired a nurse during Elisabeth's initial visit to the care facility. While no biological kinship exists between them, their interpersonal dynamic mirrors the intimacy characteristic of familial bonds.

Notably, even as Daniel lies bedridden and comatose, Elisabeth continues to visit him frequently, signifying an unwavering connection that remains undiminished by his condition. This close association leads nursing staff to mistake their relationship for one of kinship, highlighting the depth of Elisabeth's affection for Daniel. When asked if she is a close relative by a nurse ([29]Smith 2016: 34), the absence of blood ties does not negate the familial intimacy they share. Through these details, Smith portrays a relationship defined not by conventional categories but by a profound emotional and psychological intimacy that defies easy categorization. Through this narrative depiction, it becomes evident that Elisabeth's affective orientation toward Daniel transcends conventional friendship or reverence, instead encompassing profound emotional dependency and personal yearning. These recurrent fantasies serve to unveil the inherent relational complexity

and unarticulated intimacy characterizing their bond. Moreover, they poignantly demonstrate Elisabeth's psychological ambivalence and ongoing existential negotiation when confronting this socially non-normative attachment.

Beyond that, Elisabeth's mother encouraged her eight-year-old daughter to complete a school assignment by offering *Beauty and the Beast* as a reward.

Tell you what. If you make it up and it's convincing enough to persuade Miss Simmonds that it's true, I'll buy you that Beauty and the Beast thing. ([29] Smith 2016: 46)

This detail not only lends a fairy-tale quality to Elisabeth and Daniel's first meeting but also foreshadows the unconventional nature of their future relationship. The initial meeting between Elisabeth and Daniel alludes to the fairy tale *Beauty and the Beast*, which introduces themes of transformation, hidden affection, and the subversion of social expectations regarding age and appearance. This reference provides a symbolic framework for interpreting their unconventional relationship, foreshadowing the emotional depth and psychological tensions that develop throughout the novel. In popular discourse, the phrase is often used to describe couples with significant age differences, such as Michael Douglas and Catherine Zeta-Jones, signaling both disparity and emotional depth that defies social norms.

Through this metaphor, Smith captures the complex emotional bond between Elisabeth and Daniel. An older man's attraction to Elisabeth is not incidental but reflects a broader thematic concern: the novel employs a non-linear structure to explore female desire within intergenerational relationships through suggestion and concealment. Despite their generational and social differences, both characters seek self-transcendence-Daniel through cultural memory, and Elisabeth through contemporary insight - creating a mutual exchange that mitigates the anxieties of class and temporal displacement.

1.2 The Tree of Time: Temporal Disorder and Temporal Anxiety

In *Autumn*, the recurring things of trees and leaves enrich the narrative's visual layers and symbolize time's passage and life's cycles. These natural elements provide an intrinsic temporal framework that enables the intellectual female protagonist to redefine her perception of time, thereby alleviating societal anxieties stemming from Brexit. Within the text's material and social constructs, trees encapsulate the protagonist's socio-temporal experiences, reflecting the uncertainties and collective anxieties of post-Brexit society.

Though in a coma, Daniel retains vivid memories of his past, particularly his youth and interactions with his sister. Both he and Elisabeth turn to memory as a source of solace in times of distress, highlighting the role of recollection in coping with personal and societal upheaval.

> He is trying to be nice. She is ignoring him. The nicer he is, the more she despises him. This being despised by her is new. Last year and all 183 the years before it he was her hero. Last year she still liked it when he told the jokes, made the coins vanish. This year she rolls her eyes. The city, old as it is, is also somehow new and strange. Nothing's different, but everything is. It's scented by the same old trees. It is summer-jovial. But this year its joviality is a kind of open threat. ([29] Smith 2016: 183-184)

In this plot, trees function as both material entities and sensory mediators through their scent. The pervasive description of "the smell of trees in the air" transforms natural elements into carriers of social and emotional meaning. Scent's spatial diffusion makes it an effective medium for conveying collective affect. Its biological and chemical components can temporarily soothe the nervous system, enabling an embodied interaction between humans and the environment ([9]Coole and Frost, 2010: 9).This olfactory presence shapes the affective atmosphere of the narrative, mirroring how Brexit discourse permeates British society. The sense of a thrill that felt like threat reflects the material manifestation of political

anxiety - where once-pleasurable scents become infused with unease.

Moreover, the novel opens with Daniel entering the woods naked, fully immersed in nature. This scene introduces the theme of bodily and sensory entanglement with the environment, which resonates throughout the text.

> There's a little copse of trees. He slips into the copse. Perfect, the ground in the shade, carpeted with leaves, the fallen leaves under his (handsome, young) feet are dry and firm, and on the lower branches of the trees too a wealth of leaves still bright green, and look, the hair on his body is dark black again all up his arms, and from his chest down to the groin where it's thick, ah, not just the hair, everything is thickening, look. ([29] Smith 2016: 7)

"In every living being, there is a register that records time" ([26] Henri Bergson quoted in Marder 2013, 112). Trees exemplify this idea through their trunks, which expand over time and preserve the past in their annual rings. In an interview, Ali Smith similarly remarks that trees are "made of time" (Anderson 4). This ecological temporality contrasts sharply with modern conceptions of time. As Jones and Cloke observe, contemporary time structures—measured by mechanical devices such as clocks—detach human society from natural rhythms, symbolizing cultural domination over nature ([8]2002:222). Such anthropocentric and aggressive approaches to time are deeply implicated in the environmental crises of the present age. Birgit Spengler further notes that the conceptualization of time and space underpinning the anthropocentric worldview is central to current political orders, enabling the exploitative economies of Western modernit. Therefore, trees embody this alternative, ecological sense of time, evoking more environmentally conscious modes of living and organizing society while challenging the illusion of human exceptionalism. Although Smith disrupts the cyclical temporality of trees to reflect on the environmental and political degradation of contemporary Britain, her narrative also gestures toward a form of temporal entanglement that resists anthropocentrism.

Notably, the human perspective in the text is largely stripped of conventional anthropocentric traits. This dehumanized gaze invites readers into a primordial natural world. When Daniel enters the woods naked, his human presence becomes almost imperceptible. The narrative's description - "He slips into the copse. Perfect," suggesting not only the agency of the forest as an actant, but also establishing a bidirectional sensory exchange between human and nonhuman matter through tactile details such as "feet are dry and firm." This narrative strategy challenges the tendency in traditional ecocriticism to otherize nature, enacting instead the "material entanglement" advocated by material ecocriticism ([19] Iovino and Oppermann, 2014). This plot can be found that Daniel fully merges with the natural environment without hierarchical distinction. Human and plant encounter one another without interference; neither dominates the gaze. This mutual indifference evokes a pre-rational, unfamiliar state before the emergence of human reason. Smith draws a parallel between human physiological change and the vegetal growth of trees "heavy with green leaves." This comparison destabilizes the presumed uniqueness of the civilized human body and, through the phrase "not just the hair, everything is thickening, look," conjures a biopolitical imagination of a pre-modern continuum of matter ([3] Bennett, 2010). Lying in his hospital bed, Daniel seems trapped like a figure encased in the trunk of a Scots pine, unable to awaken - a metaphor that powerfully encapsulates the tension between embodied time and the suspended temporality of modern life.

Additionally, Trees are widely recognized as symbols of the life cycle, mirroring human experiences of birth, growth, maturity, and death. Religious texts such as *Genesis* and the *Quran* frequently liken human development to plant growth ([6] Chevalier and Gheerbrant, 1996: 1049–62), reinforcing the symbolic and spiritual significance of trees across cultures. In Ali Smith's *Autumn*, this symbolism is reflected in the recurring presence of trees and leaves alongside the comatose Daniel.

But now? The old man (Daniel) opens his eyes to find he can't open his eyes. He seems to be shut inside something remarkably like the trunk of a Scots pine. At least, it smells like a pine. He's got no real way of telling. He can't move. There's not much room for movement inside a tree. His mouth and eyes are resined shut. There are worse tastes to have in a mouth ·though, truth be told, and the trunks of Scots pines do tend to be narrow. Straight and tall, because this is the kind of tree good for telegraph poles, for the props that pit builders used in the days when industry relied on people working in pits and pits relied on pitprops to hold the ceilings of the tunnels up safely over their heads. ([29] Smith 2016: 89)

These natural elements do not merely serve as setting, but function as narrative motifs that echo themes of life, decay, and renewal. By associating Daniel's suspended state with arboreal imagery, Smith underscores the continuity between human existence and natural cycles, while engaging with deep-rooted cultural and religious metaphors that frame life through the lens of vegetal growth. The scene in which Daniel is trapped inside a Scots pine offers a materialist literary representation that exposes the historical trauma and identity anxieties of post-Brexit Britain. Within this passage, the European Scots pine transforms from a living organism into an industrial commodity - used as telegraph poles and mine timber - before ultimately engulfing the human body, thus enacting a form of post-industrial material irony. This complete cycle constructs a self-contained material allegory: the pine, once instrumentalized by humans for its "straight and tall" physical properties, reacquires agency and imprisons the human subject within its trunk, illustrating a retaliatory mode of object domination.

Daniel's immobilization through tree resin, along with his sensory subjugation to the pine's materiality ("smelling like pine," "mouth glued shut"), reverses the conventional subject-object hierarchy. Here, the human becomes subordinate to the object, echoing Marx's theory of alienation in industrial modernity, where human-made systems turn into autonomous forces that dominate their creators. The pine transcends its natural state to become a "hyperobject" ([4] Brown, 2001), imbued with historical memory and political agency. Its material presence embodies multiple temporalities: biological life cycles and capitalist modes of production. The mine imagery evokes suppressed labor histories, particularly resonating with the defeat of the 1984–85 UK miners' strike, and reflects broader processes of British modernization. The resin-sealed eyelids metaphorize "Brexit blindness" - a condition of political myopia - and recall the spatial memory of deindustrialization and class trauma in "left-behind Britain." The allusion to the closure of the Orgreave coking plant in 1985 further historicizes this loss. Meanwhile, the distant view afforded by the telegraph pole symbolizes the visual regime of contemporary surveillance capitalism. Daniel's paradoxical position- immobile yet forced to look far ahead - mirrors post-Brexit Britain's struggle between the aspirational rhetoric of "Global Britain" (UK Government, 2017) and its socio-political constraints. This material narrative also traces a cyclical temporality of industrial decline: the 1980s mine closures resonate with the 2016 steel tariff crisis, positioning Daniel (a post-war baby boomer) and Elisabeth (a millennial) as embodiments of intergenerational material memory.

Smith's material writing exceeds mere metaphor, actively engaging in the cultural politics of redefining "Britishness" in the post-Brexit era. Through the pine motif, she not only depicts individual bodily entrapment but also articulates the collective trauma of national post-industrial transformation, offering a nuanced literary lens through which to understand contemporary social divisions in the UK. Moreover, her narrative subtly critiques the logic of "usefulness" under capitalism. The romanticized portrayal of trees as "messengers between people" after being felled reveals the instrumentalization of life value under capitalist paradigms. This logic resurfaces in Brexit discourse: whether in the call to "Take Back Control" or in the nostalgic desire for industrial revival in "Left Behind Britain," both rely on the reclamation of material heritage to stabilize identity, yet ultimately fall into deeper material entrapments.

The tree in *Autumn* carries dual symbolic weight: it represents not only Daniel's personal dilemma but also encapsulates the socio-political uncertainties and collective anxieties of post-Brexit Britain. The natural imagery reflects how individuals, amid profound social transformations, seek psychological stability through deep emotional connections and memory. At the same time, it reveals the symbolic resonance of Daniel and Elisabeth's intergenerational relationship within this complex historical and cultural context.

What's more, The novel challenges conventional, clock-based temporality in the scene where Daniel throws his watch into the river during a walk with Elisabeth along the riverside.

> She does remember, though, the day they were walking along the canal bank when she was small and Daniel took his watch off his wrist and threw it into the water ([29] Smith 2016: 76)

Drawing on Heidegger's philosophy in *Being and Time*, time is not merely an objective, measurable entity (i.e., "clock time"), but is fundamentally intertwined with human existence. By rejecting clock time, Daniel resists the dominance of modern temporal norms and the technological rationality that governs contemporary life. This act may be interpreted as an attempt to return to a more authentic mode of temporality-one grounded in individual being, future possibilities, and the awareness of mortality. In discarding the watch, he moves away from the condition of everydaynes toward a more genuine state of existence, one that foregrounds his being-toward-death and openness to future potential.

As a paradigmatic commodity of modern society, the watch transcends its utilitarian function to become a symbolic carrier of identity, class, and temporal discipline (Baudrillard, 1998). Daniel's act of discarding the watch constitutes a rejection of its roles as both a mechanism of social normalization and a marker of conspicuous consumption ([33] Veblen, 1899). Instead, he reconfigures it as a medium of private affect, thereby challenging the instrumental logic of consumer culture and enacting a form of anti-consumerist resistance.The discarded watch does not vanish; rather, it persists more forcefully in Elisabeth's memory, becoming a material link between past and present, from the perspective of Bill Brown's *Thing Theory* (2001),. Through Daniel's act, the object is removed from circulation, effectively achieving de-commodification ([2] Appadurai, 1986) and acquiring new cultural significance - as a politically charged artifact imbued with symbolic resistance.

Ultimately, Daniel's gesture functions as a literary intervention against the dominant temporal narratives of the Brexit process. After the 2016 referendum, British society was marked by a collective anxiety structured around imposed deadlines and linear, instrumentalized conceptions of time-hallmarks of modern disciplinary power. Through Daniel's deliberate abandonment of the timepiece, Smith not only deconstructs this oppressive temporal regime but also offers an alternative: a fragmented, fluid, and resistant mode of time perception that resists political instrumentalization and reclaims time as a space of possibility.

Notably, The wristwatch-as a paradigmatic product of industrial modernity-undergoes a strategic subversion of its symbolic meaning. Historically, British horology, particularly its association with Greenwich Mean Time (GMT) and the precision engineering tradition exemplified by figures such as David Rooney and James Nye (2020), has long rendered the timepiece more than a utilitarian object; it has functioned as a marker of national technological prowess and cultural superiority ([13]Edgerton, 1996). Within the context of Brexit, such material symbols have been reappropriated by nationalist discourse to support the myth of a globally influential, post-imperial Britain. Daniel's act of discarding his watch thus carries dual deconstructive force: it negates both the object's original functional purpose and its symbolic role as an emblem of national identity ([2] Appadurai, 1986). This literary reconfiguration of material culture exposes the constructed and fragile nature of "Britishness" within contemporary political

rhetoric. Through the abandonment of a quintessential symbol of "Made in Britain," Smith demystifies the nostalgic sentiments embedded in Brexit ideology. While pro-Brexit narratives attempt to fix historical memory through tangible artifacts like coins and stamps, Daniel's gesture functions as a private ritual of symbolic destruction - one that challenges official constructions of collective memory ([22] Kopytoff, 1986: 72) and reveals the hybrid, contested nature of postcolonial British identity.

Moreover, the relationship between Elisabeth and Daniel extends beyond the personal, reflecting broader modes of affective and intellectual support in times of social upheaval. Elisabeth, a young British-born intellectual facing precarity in both employment and economic stability, turns to Daniel for guidance and emotional sustenance. As a European immigrant with deep historical knowledge and cultural capital, Daniel offers her a critical historical lens through which to interpret and navigate the uncertainties of post-Brexit Britain. Their intergenerational and cross-cultural bond thus becomes a model of resistance against the isolating effects of neoliberalism and nationalism.

In this light, what might appear as a minor narrative detail—the throwing away of a watch—acquires profound political resonance. It serves not only as a literary counterpoint to the linear, deadline-driven temporality of Brexit politics but also as a symbolic dismantling of the material foundations of nationalism. Ultimately, Smith's portrayal of this moment constitutes a deeper interrogation of identity formation in the post-crisis era—one that resists essentialist definitions of belonging and foregrounds the necessity of intersubjective, historically informed, and materially grounded modes of solidarity.

1.3 The Tree of Ethnicity: Ethnocultural Concerns and Class Identity Dilemmas

Elisabeth's attempt to transcend established social relational norms reflects both her pursuit of individual agency and a deeper critique of the socio-political order. This study examines her trajectory through the dual dimensions of ethnicity and race. While existing scholarship on *Autumn* has predominantly focused on racial and migratory themes ([34] Wally 2017; [1] Adam 2018), such emphasis has often overshadowed the underlying class dynamics at play. In reality, post-Brexit Britain has witnessed the emergence of a new social figure - one that inhabits the margins of intersecting identity categories and challenges conventional frameworks of belonging.

This study further reveals that, in reality, Elisabeth's class position as an intellectual woman exemplifies the structural contradictions characteristic of neoliberal knowledge labor. She exemplifies the structural contradiction of neoliberal knowledge labor: she possesses cultural capital (art historical expertise) but lacks economic stability (precarious temporary employment). Her engagement with issues of ethnicity and migration functions as a displacement of her unresolved class anxieties. As Žižek (1989) argues, individuals often evade systemic contradictions by identifying with an idealized "sublime object" that masks deeper social antagonisms. The novel's juxtaposition of the Scots pine with the opening of the Scottish Parliament illustrates this ideological mechanism.

> "The Scots pine doesn't need much soil depth, is remarkably good at long life, a tree that can last for many centuries" and she also talks about "the opening of the Scottish Parliament [...] Her mother who has seen it several times already herself, was in tears from the start" ([29] Smith, 2016:90; 197).

This scene constructs a constellation of materially and historically charged symbols whose meanings must be interpreted within the political ecology of post-Brexit Britain. The Scots pine functions not merely as a botanical entity but as a "hyperobject" ([4] Brown, 2001) - its material properties (cold resistance, longevity, ability to thrive in shallow soil) structurally align with narratives of Scottish historical resilience. In parallel, the 1999 reconvening of the Scottish Parliament, symbolized through the mother's tears, emerges as a materialization of political autonomy imbued with affective and intergenerational memory.

The pine's biological trait of not requiring deep soil metaphorically maps onto Scotland's adaptive survival within the Westminster system, while the mother of Elisabeth's repeated emotional response to the parliamentary opening underscores the unfinished nature of devolution. Under the shadow of the 2016 Brexit referendum, this symbolic configuration is reactivated: the pine's bright red seed capsules—a variation of the earlier poppy imagery—evokes the violent emergence of nationalist sentiment, while the parliamentary building itself becomes a stage for power struggles emblematic of a post-democratic order. By juxtaposing natural and political objects—the Scots pine and the Parliament—Smith deconstructs the monolithic narrative of Britishness. Here, matter is not passive backdrop but an active participant in the enactment and witnessing of historical violence ([3] Bennett, 2010). Furthermore, the pine's endurance under adverse conditions serves as a metaphor for the tenacity of marginalized and working-class subjects who, despite limited resources, persist and endure—thereby linking natural resilience to socio-political survival. For example, Daniel, with his likely background as a migrant or refugee from continental Europe (potentially Southern or Eastern Europe), and Elisabeth, an economically precarious intellectual, both embody the resilience of the Scots pine—persisting in conditions of material scarcity and social uncertainty. Notably, Daniel, as a postcolonial migrant, assumes the role of a cultural capital provider, reversing the traditional colonial narrative in which knowledge and culture flow unidirectionally from the metropole to the periphery. This inversion reflects the broader erosion of cultural hegemony in post-Brexit Britain and signals a reconfiguration of epistemic authority within a shifting geopolitical landscape.

Through the juxtaposition of natural and political things—the Scots pine and the Scottish Parliament - Smith not only deconstructs the monolithic construct of Britishness, but also foregrounds the agency of matter as both witness and participant in historical violence ([3] Bennett, 2010). Simultaneously, the novel interrogates the violent emergence of nationalist sentiment and its structural manifestations in contemporary society. However, *Autumn*'s exploration of identity, power, and belonging extends beyond the framework of ethnicity and nationhood. Beneath the surface of migration discourse lies a deeper socio-political dimension that warrants critical examination.

Beyond that, in the scene where characters are depicted "checking and sending passport forms" at the post office ([29] Smith, 2016: 15), individuals directly confront the pressures and challenges associated with migration. This moment reveals how immigration policies function as mechanisms of exclusion, exposing migrants to institutional barriers and social marginalization. Furthermore, it illuminates the intersections between migration, precarity, and class stratification within contemporary British society. Such representations underscore the necessity of examining migration not merely through the lens of national identity, but as a deeply embedded socio-economic phenomenon shaped by global inequalities.

> The man is looking at her filled-in form. Is your surname really Demand? he says. Uh huh; Elisabeth says. I mean yes. A name you live up to, he says. As we've already ascertained. Uh, Elisabeth says. Only joking, the man says. His shoulders go up and down. And you're sure you've spelt your Christian name correctly? he says. Yes, Elisabeth says. That's not the normal way of spelling it, the man says. The normal way of spelling it is with a z. As far as I'm aware. Mine is with an s, Elisabeth says. Fancy way, the man says. It's my name, Elisabeth says. It's people from other countries that spell it like that, generally, isn't it? the man says. He flicks through the outdated passport. But this does say you're UK, he says. I am, Elisabeth says. Same spelling in here, the s and all, he says. Amazingly, Elisabeth says. Don't be sarky, the man says. Now he's comparing the photograph inside the old passport with the new sheet of booth shots Elisabeth has brought with her. ([29] Smith 2016: 21-22).

The scene in which a post office employee repeatedly questions Elisabeth's surname "Demand"—"And you're sure you've spelt your Christian name correctly?"—and critiques her spelling of "Elisabeth" as deviating from what he claims is the "normal" (i.e., Elisabeth with a 'z')—reveals how seemingly trivial linguistic norms function as instruments of ideological regulation. The employee's invocation of normal spelling does not reflect a linguistic fact, as both "Elisabeth" and "Elisabeth" are historically attested variants; rather, it exemplifies a socially constructed norm that serves to enforce a monolithic conception of British identity. This moment underscores that material thing such as "passport" do not guarantee social legitimacy independently, but must conform to cultural expectations embedded within bureaucratic systems.

Intriguingly, The pun on "demanding" further illustrates how power operates through language to negate subjectivity: the surname "Demand" is linguistically twisted into an accusation—either excessive entitlement or unworthiness. As Professor Liang notes, this reflects a subtle class-based disdain for those perceived as less educated. Yet, the encounter between an educated woman and a lower-status official within a state-administered setting reveals deeper class tensions masked by performative political correctness. Such dynamics align with Burrell and Hopkins' observation that Brexit discourse often employs reductive binaries that obscure the complex intersections of race, class, and migration ([5]2019:5). Elisabeth herself, however, remains largely unaware of these underlying class conflicts, in part due to the ambiguity of her own class positioning. Raised by her single mother Wendy Demand in modest economic circumstances, Elisabeth occupies a precarious position in the labor market as a gig worker—a condition characteristic of the precarious intellectuals ([30] Standing, 2011: 59), a growing class of highly educated individuals facing insecure employment, limited benefits, and unstable livelihoods. She possesses cultural capital but lacks economic security, placing her in a liminal space between traditional working- and middle-class categories. Her insistence—It's with an s—constitutes a disruption of the unidirectional performativity of naming practices. By persistently asserting her preferred spelling, she transforms her name into an act of counter-performativity, challenging the state's monopolistic authority over identity definition. This scene encapsulates the pervasive identity anxieties of post-Brexit Britain, where disciplinary power operates through micro-political mechanisms embedded in everyday administrative procedures. The seemingly minor difference between "s" and "z" exposes the fictive coherence of "Britishness", revealing a fissure through which cultural hegemony may be destabilized.

Moreover, the passport functions not merely as a personal document but as a materialization of state sovereignty and border logic. Drawing on thing theory, the passport is more than paper—it is a politically charged thing that determines who is recognized as a legitimate citizen. Within the post office setting, it becomes both a record and a tool of interrogation, enabling the employee to question Elisabeth's national belonging. The line, "But this does say you're UK," exemplifies the object's dual nature: simultaneously proof of citizenship and pretext for exclusion. This duality mirrors broader patterns in post-Brexit literature, wherein racialized narratives are frequently mobilized to obscure latent class antagonisms ([26] Liang; [10] Craig, 2017). Ultimately, each query—"Is your surname really Demand?"—functions as a mechanism of biopolitical surveillance, compelling the subject to authenticate their place within the nation. While superficially framed as verification of legal status, these interactions subtly prompt Elisabeth to confront her ambiguous class identity. As a native-born, precariously employed intellectual, her experience epitomizes the downward mobility of the neoliberal knowledge class—educated yet vulnerable, culturally empowered yet economically disenfranchised. In this way, the post office scene emerges as a condensed site of resistance, exposing the entanglement of language, bureaucracy and power in the production of subjectivity under late capitalism.

II. CONCLUSION

As a literary response to the significant historical event of Brexit, this study identifies that Ali Smith's *Autumn* constructs a multi-dimensional discursive framework through its distinctive "arboreal" mode of thinking, offering a novel cognitive lens through which to understand the socio-political order in the post-Brexit era. By systematically analyzing three thematic dimensions—the tree of desire, the tree of time, and the tree of ethnicity—this paper elucidates how the intellectual female protagonist, Elisabeth, navigates social fragmentation through intergenerational desire, temporal reconfiguration, and ethnic discourse.

Firstly, in the dimension of intergenerational desire, the figure of the tree transcends its conventional function as a metaphor, serving instead as an affective "bond" that connects different generations. The relationship between Elisabeth and Daniel is symbolically articulated through imagery associated with leaves, wherein this cross-generational emotional connection not only challenges normative social conventions but also presents a potentiality for transcending generational divides. As Jusslin points out, such "intergenerational desire" is subtly embedded within the text, requiring specific reading strategies to decode its latent significations.

Secondly, in the dimension of temporal politics, the novel subverts the linear and homogenized modern conception of time through the cyclical life patterns of trees and the imagery of seasonal change. Daniel's symbolic act of abandoning his wristwatch not only resonates with Heidegger's philosophical reflections on "authentic time," but also constitutes a literary resistance to the collective temporal anxiety prevalent in British society during the Brexit period. The tree, as an emblem of cyclical temporality, offers a framework for the reintegration of fragmented social memory, thereby challenging dominant historical narratives shaped by modernist temporality.

Finally, in the dimension of national discourse, the motif of the tree of ethnicity subtly incorporates the issue of the Northern Irish border into the broader discussion of Brexit. By foregrounding the local specificity of plant life, the novel underscores the fluidity and complexity of identity formation, moving beyond reductive binaries of ethnic opposition.

Ultimately, *Autumn* articulates a vision of order grounded in ecological thinking: just as trees are rooted in the earth yet reach toward the sky, individuals must simultaneously uphold cultural belonging while embracing openness and inclusivity. This arboreal mode of thought not only opens up possibilities for symbolic healing in post-Brexit Britain, but also offers significant literary insights into how societies globally might navigate populist surges and cultural fragmentation. In an age marked by uncertainty, Smith's literary imagination suggests that authentic order is not found in rigid uniformity, but rather in the dynamic interdependence of difference—much like the self-regulating resilience of a forest ecosystem.

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Stop Bullying—A University Theatre Project (Pilot) Implemented in a Summer Camp for Children and Designed to Promote Social Cohesion

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ABSTRACT

This study explores the Stop Bullying theatre initiative, implemented as part of a summer camp program designed to promote literacy and social cohesion through participatory drama. Grounded in a Design-Based Research framework, the project engaged 13 children (aged 8–12) in reading, rehearsing, and staging Claudia Kumpfe's play Alone! School as a Crime Scene!, which addresses bullying and peer dynamics between children in schools. A variety of methods were employed, including pre- and post-intervention surveys on bullying and social cohesion, daily field diaries from theatre coaches, and qualitative feedback from children and parents. The results demonstrate statistically significant improvements in the participants' sense of equality, comfort, and group belonging, supported by qualitative accounts of empathy, cooperation and new friendships. Coaches' observations indicated increased fluency, motivation and expressive oral reading. The findings highlight theatre pedagogy's potential to foster inclusion, solidarity, and democratic participation while also offering low-threshold entry points for literacy engagement. This study underscores the value of integrating socially relevant themes into participatory arts projects to cultivate both cognitive and socio-emotional development in inclusive educational settings.

Keywords: theatre pedagogy, social cohesion, bullying prevention, reading theatre, inclusive education.

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I. INTRODUCTION

"They affirm the role of education not only in fostering individual development, but also in promoting democratic participation, social justice, and cohesive community life—objectives that are central to the vision and implementation of inclusive learning practices" (Giera, in press).

In contemporary educational and social contexts, inclusion functions both as an aspirational ideal and a guiding principle for fostering justice, belonging, and participation for all members of society (UN, 2023). While complete inclusion may never be fully realised, it provides a conceptual and ethical orientation for communities committed to equitable participation. Insights from education, special needs pedagogy, and social work are central to shaping inclusive practices that address structural barriers and promote shared learning opportunities. At the policy level, the European Union underscores literacy as a cornerstone for advancing equity, social inclusion, and future-oriented learning—priorities embedded within the *European Education Area* and the *Council Recommendation on Pathways to School Success* (European Commission, 2022; European Agency, 2021). These frameworks are designed to reduce early school leaving to below 9%; strengthen core competencies—particularly reading—among multilingual, disadvantaged, and migrant learners; and integrate inclusive principles across education systems (Giera, in press).

Against this backdrop, the theatre project *Stopp Mobbing!* represents a cyclical, long-term intervention that has been implemented since 2021 with multiple learning groups in both formal and informal educational settings. Between 2016 and 2022, the project was carried out in three

iterative DBR cycles involving students aged 11–13 from youth centres and inclusive secondary schools in Germany, with each cycle adapted to its particular setting (Giera, 2025):

Cycle 0 served as a school-based pilot with 24 participants, including learners with dyslexia and other special educational needs. Over weekly 90-minute sessions, students read and staged *Alone! School as a Crime Scene!* (Kumpfe, 2013, translated in English), focusing on developing both reading fluency and group cohesion (Giera, in press).

Cycle 1 took place as a one-week workshop in a youth club with 13 girls from varied linguistic and cultural backgrounds. The programme blended reading activities with theatrical performance, supported by structured elements such as reading corners and collaborative scene work to foster confidence (Giera, in press).

Cycle 2 was conducted as a controlled intervention in a comprehensive school with 75 students, divided into a theatre group and a non-theatre control group. Reading performance was assessed before, immediately after, and three months following the intervention using the LGVT 5-12 test (Schneider et al., 2017). While standardised improvements in reading were limited, observations pointed to significant gains in motivation, active participation, and social interaction (Giera, in press).

Across all cycles, the approach incorporated structured reflection, peer feedback, and public performances to strengthen engagement, while safeguarding anonymity and avoiding explicitly identifying students with special educational needs to ensure a stigma-free learning environment (Giera, in press).

Across the first three DBR cycles, several challenges emerged. Logistical issues included fluctuating attendance in extracurricular settings, scheduling constraints, and inconsistent data collection methods. Methodologically, standardised reading assessments proved limited in capturing the prosodic, emotional and interactive dimensions of reading central to theatre-based work. In Cycle 0, irregular participation and the constraints of weekly sessions reduced continuity, while in Cycle 1, the short workshop format limited sustained reading development. Cycle 2, despite its controlled design, faced difficulties ensuring equal engagement across intervention and control groups (Giera, in press).

Despite these constraints, the project demonstrated considerable potential. Qualitative findings consistently showed improvements in motivation, group cohesion and performative comprehension. The theatre framework provided low-threshold access to literacy activities, particularly supporting learners with reading difficulties or low self-confidence. Embodied, cooperative learning environments encouraged active role creation, peer support, and opportunities for success. Flexible session structures and co-constructed performances enabled differentiated instruction and inclusive participation. Collectively, the cycles highlight the capacity of arts-integrated approaches to link literacy development with social-emotional growth, suggesting that evaluative tools should be expanded to capture performance-based and collaborative competencies alongside conventional reading measures (Giera, in press).

The project is based on the premise that, within newly formed groups, norms and rituals drawn from theatre pedagogy can foster social cohesion through the collaborative process of creating and performing a theatrical production. The first exploratory implementation with scientific supervision was carried out as a week-long holiday programme at a youth centre. Two university theatre coaches maintained a field diary, documenting and evaluating the applied methods for reading and dramatic play, as well as their impact on group social interaction. The project included multilingual children and adolescents, some of whom were highly engaged in the process but expressed little interest in public performance or reading activities. Notably, the project brought together young people who had previously only encountered each other casually in their neighbourhood, leading to the formation of new friendships within the week.

The play at the centre of the project addresses the theme of bullying, depicting the experiences and emotions of a child excluded by their classmates. In contrast to conventional prevention programmes—often delivered by experts through discussions, role-play, films, or awareness sessions—this approach engages participants as producers rather than mere recipients of content. Through embodying multiple roles, such as bully, victim, bystander, or helper, students can experientially simulate the dynamics of bullying. This aesthetic mode of engagement allows participants to enter and exit roles, reflect on role-specific behaviours, and discuss critical scenes during structured breaks. Such reflective intervals are integral to processing the emotional and social content of the play.

Theatre production also requires the development of organisational and collaborative competencies, ranging from planning rehearsals to managing related tasks such as creating invitations for the performance. This process-oriented work fosters project management skills alongside artistic expression. Methodologically, the project is situated within the *Design-Based Research* (DBR) framework, which seeks to address real-world problems in close collaboration with practitioners from the outset. In educational research, DBR enables researchers, practitioners and other stakeholders to jointly develop, implement and refine interventions in authentic learning environments.

This study addresses the following research question: *How can a university theatre project in a summer camp setting promote social cohesion and contribute to the prevention of bullying among children?*

Following this introduction, Section 2 outlines the theoretical framework, focusing on social cohesion, theatre pedagogy for promoting social interaction and reading theatre as a tool for fostering group literacy. Section 3 details the design and methods, including sample recruitment, the summer camp schedule, the theatre play, and this study's methodological approach. Section 4 presents the results and is followed by Section 5, which discusses the findings in light of research on social cohesion, anti-bullying strategies, and inclusive education. Section 6 concludes with key insights and implications for future theatre-based and inclusive educational initiatives.

This study addresses researchers, educators, theatre practitioners, and policymakers interested in creative, evidence-based approaches to fostering social cohesion and preventing bullying among children.

II. THEORETICAL FRAMEWORK

This section outlines the theoretical foundations underpinning this study. It begins by examining the concept of social cohesion (2.1) as a key element in fostering inclusive and supportive group dynamics. It then considers theatre pedagogy as a means of promoting social interaction and collaborative learning (2.2). Finally, it explores the method of reading theatre as a pedagogical approach for enhancing literacy skills within a group context (2.3). Together, these perspectives provide the conceptual basis for designing and implementing the theatre project investigated in this study.

2.1 Social Cohesion

Chan, To and Chan (2006) provide a refined and operational definition of social cohesion, emphasising its character as a state of affairs rather than a process. They define it as follows:

> "Social cohesion is a state of affairs concerning both the vertical and the horizontal interactions among members of society as characterized by a set of attitudes and norms that includes trust, a sense of belonging and the willingness to participate and help, as well as their behavioural manifestations" (p. 289).

The authors (Chan et al., 2006) highlight several key elements: Trust, help, and cooperation are fundamental, as these are immediate implications of cohesiveness (pp. 288–289). A sense of belonging or shared identity is indispensable for cohesion, since it links individuals to society beyond short-term interactions (p. 289). Cohesion requires both subjective attitudes (trust,

belonging, willingness to help) and their objective manifestations in behaviour, such as participation and cooperation (p. 289). It encompasses both horizontal interactions (between individuals and groups in civil society) and vertical interactions (between state institutions and citizens) (p. 289). The concept is distinguished from social capital, which refers to individual or group-level networks and benefits, whereas social cohesion is a holistic societal attribute (p. 291). Importantly, their minimalist definition excludes values such as tolerance, equality, or pluralism from being constitutive elements of cohesion; these may be conditions or correlates but not the core of the concept itself (p. 290).

Schiefer and Noll (2017) pointed out that social cohesion has different historical and area-related roots. The literature on social cohesion reflects two main discourses (Schiefer & Noll, 2017: 582-582):

The academic discourse, situated within disciplines such as sociology, political science and psychology, focuses on conceptual and analytical clarity (e.g., Bollen & Hoyle, 1990; Putnam, 2000; Chan et al., 2006). In contrast, the policy discourse is problem-oriented, employing the term as a broad "catchword" for diverse societal challenges (Chan et al., 2006, p. 277). Policy-driven research is largely initiated by governments, think tanks, and transnational organisations, with Canada, the European Union, the Council of Europe, Australia and the UK being leading actors (Schiefer & Noll, 2017: 582-582).

A major challenge in reaching consensus on the concept stems from the politicised nature of the policy discourse, where interpretations of social cohesion differ by institutional and ideological context. For instance, the World Bank links it to economic development and poverty reduction, while the EU and Council of Europe stress responses to economic instability. In the UK, debates emphasise cultural diversity. National political actors often use social cohesion to support divergent agendas, ranging from advocating homogeneity, nationalism or traditional values to promoting diversity, equality and solidarity. Ideological perspectives, thus, shape its meaning: social-democratic views highlight equality and solidarity, nationalist views stress shared history and traditional values and liberal views emphasise equal individual opportunities. (Schiefer & Noll, 2017: 582-583). To sum up, Schiefer and van der Noll (2017) define social cohesion as a descriptive attribute of a collective, highlighting three essential dimensions:

- Social relations—encompassing rich social networks, interpersonal and institutional trust, and civic engagement (pp. 585–587));
- Identification—the emotional attachment individuals feel toward their social or geographical unit (pp. 587–588);
- Orientation towards the common good—a sense of responsibility, solidarity, and adherence to social order (pp. 588–589).

They emphasise that while shared values, inequality and quality of life frequently appear in discourse, these should be treated as determinants or consequences of social cohesion, not its core elements (pp. 589–593).

Social Cohesion could include structural, relational and cultural dimensions. Fonseca, Lukosch and Brazier (2019) propose an updated definition:

> "The ongoing process of developing well-being, sense of belonging, and voluntary social participation of the members of society, while developing communities that tolerate and promote a multiplicity of values and cultures, and granting at the same time equal rights and opportunities in society." (p. 246)

They conceptualise social cohesion as a dynamic and multidimensional process that unfolds across three interrelated levels:

- Community level-characterised by networks, trust, reciprocity, solidarity, shared norms and values and the social environment (pp. 241–242);
- Individual level-includes belonging, participation, recognition and legitimacy (p. 242);

- Institutional/societal level-encompasses governance, human rights, reducing inequality and exclusion, social stability and multiculturalism (pp. 243–244).

Importantly, cohesion is said to emerge at the intersection of these three levels, illustrating its integrative and relational nature (p. 244). Their framework explicitly emphasises the roles of multiculturalism, tolerance, diversity and voluntary participation as central to fostering resilient and inclusive societies (pp. 245–246). The Council of Europe (2024) and the United Nations (2023) see social coherence as a relevant aspect in education and for global society. The Council of Europe (2024) frames social coherence as democratic culture: "The participation of learners in all pertinent areas of decision making remains a key principle in the endeavors to educate active citizens who engage and take responsibility both in democratic processes in society and in the workplace" (Council of Europe, 2022, p. 13). In their model of competences for democratic culture, they include the categories of values, attitudes, skills, knowledge and critical understanding (see Fig. 1).

Moreover, the United Nations (2023) emphasises that social cohesion is a multidimensional construct, relevant both as a societal condition and as an outcome of social, political and economic processes: "The strength of relationships and the sense of solidarity among members of a society, characterized by trust, belonging, participation and inclusiveness." (UNESCO, 2023, p. 6)

In sum, the concept of social cohesion has evolved from minimalist definitions stressing trust, belonging and cooperation (Chan et al., 2006), through multidimensional frameworks distinguishing social relations, identification, and commitment to the common good (Schiefer & van der Noll, 2017), to more dynamic models that highlight multiculturalism, diversity and voluntary participation across the individual, community and institutional levels (Fonseca et al., 2019). Recent perspectives by the Council of Europe (2022) and the United Nations (2023) further underscore its importance for education and global society, framing cohesion as both a democratic competence and a multidimensional societal attribute rooted in solidarity, participation, and inclusiveness. Taken together, these perspectives show that social cohesion is not only a key analytical concept but also a normative and practical orientation for building inclusive, resilient, and democratic communities, thus providing a valuable foundation for exploring its role in the field of education and beyond.

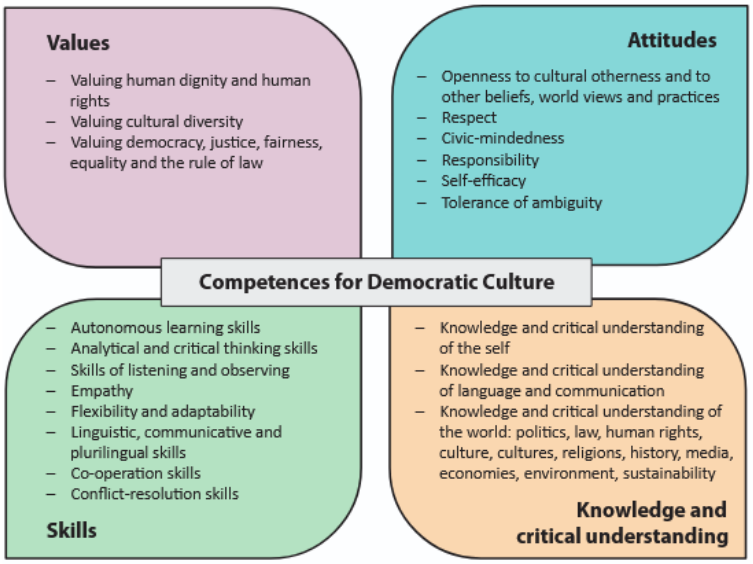

Figure 1: The model of competences for democratic culture (Council of Europe, 2022, p. 12)

2.2 Theatre Pedagogy for Promoting Social Cohesion

Arts education boosts creativity, self-expression, social skills and academic motivation. It fosters cultural inclusion and dialogue and can inspire social change, ultimately enriching lives by enhancing meaning and well-being (Jónsdóttir & Thorkelsdóttir (2024, p. 23, 24). Jónsdóttir and Thorkelsdóttir (2025) conducted a qualitative case study on *Skrekkur* (a stage competition in Reykjavik), a youth theatre-based competition for lower secondary schools in Reykjavík. Data were gathered through observations and focus group interviews with 40 students from five schools (pp. 26–27).

The findings show that participation strengthened students' self-esteem and well-being, as they reported greater confidence, trust and a sense of belonging. Students described *Skrekkur* as an empowering experience that fostered solidarity and created lasting memories (pp. 28–29). The collaborative playbuilding process emphasised cooperation and democratic dialogue, with participants learning to listen, respect different opinions and make collective decisions (pp. 30–31).

The study concludes that *Skrekkur* provides a meaningful context for youth to explore creativity, identity, and social relations. It enhances peer connections across school years, promotes empathy and supports personal growth. At the same time, the competitive format raises questions about inclusivity, since only a limited number of students per school can participate (pp. 32–33). *Skrekkur* demonstrates how youth theatre can positively impact students' well-being and self-esteem by combining artistic expression with cooperation, creativity and collective problem-solving. Discussions in the ensemble helped to promote democratic participation and social cohesion.

Theatre pedagogy has long been recognised as a powerful approach for fostering social cohesion, enabling individuals and groups to engage in processes of dialogue, collaboration and collective meaning-making. At its core, theatre pedagogy emphasises participation, creativity and reflection, making it well suited to address issues of social fragmentation, exclusion and inequality.

One of the most influential figures in this field is Augusto Boal (2002). Augusto Boal's *Forum Theatre* invites audiences to become *spect-actors*, intervening in scenes of oppression by stepping into the protagonist's role and trying new strategies (Boal, 2002). Instead of prescribing solutions, it encourages dialogue and reflection, using theatre as "rehearsal for reality" (p. 251). Actors and observers (*spect-actors*) maintain tension to allow critical exploration, fostering empathy, democratic exchange, and collective problem-solving—key aspects of socially engaged theatre. So, for Boal, social cohesion is part of his Forum Theatre because his purpose is to foster communication with actors and non-actors to design together real-life scenes to solve a collective problem. This group work on stage enables growth in social cohesion.

In educational contexts, drama pedagogy has been shown to strengthen communication, empathy, and social understanding. Giera (2025) highlights its role in developing both language skills and interpersonal competence in inclusive learning settings, while Nicholson (2011) points to its capacity to foster cooperation, respect, and critical awareness. Taken together, these perspectives illustrate that theatre pedagogy not only enriches artistic and educational practices but also functions as a practical tool for promoting social cohesion. By foregrounding participation, empathy and collaboration, drama creates opportunities for learners and communities to rehearse democratic life, negotiate diversity, and strengthen the bonds that hold societies together.

2.3 Reading Theatre for Fostering Group Literacy

Readers' Theatre, which integrates repeated oral reading with performative elements, has been shown to enhance reading fluency in inclusive educational contexts. Hautala et al. (2022, p. 674) report gains not only in speed and accuracy but also in prosody and learner motivation. Likewise, Quezada (2021, p. 586) highlights the method's adaptability to diverse learning environments, including online and hybrid formats,

underscoring its relevance in global and resource-limited settings. By emphasising intonation, rhythm, and role embodiment, Readers' Theatre supports second language learners in developing pronunciation, expression and comprehension without the pressure of memorisation or grammatical precision.

Reading theatre, commonly implemented through Readers' Theatre approaches, has been widely recognised as an effective strategy for promoting literacy development, particularly in fostering fluency, comprehension and motivation. Unlike traditional reading practices, reading theatre situates literacy as a performative and collaborative act, where repeated oral reading, expression and prosody are central to group-based meaning-making.

Research demonstrates that Readers' Theatre is especially beneficial for struggling readers. Rinehart (1999) showed that integrating performance-based reading into tutorials enhances reading fluency and motivation among children with reading difficulties. Similarly, Corcoran and Davis (2005) found that second- and third-grade special education students experienced both fluency gains and greater reading confidence when engaged in Readers' Theatre.

In classroom settings, Readers' Theatre contributes to literacy by embedding fluency instruction into the reading curriculum. Griffith and Rasinski (2004) describe how teachers can foster automaticity, expression and comprehension through performance reading, while Young and Rasinski (2009) provide evidence that repeated oral performance improves fluency, comprehension, and student engagement. Complementary findings are reported by Keehn (2003), whose experimental study documented significant oral reading fluency improvements through guided practice and theatrical performance.

Beyond fluency, Readers' Theatre has been shown to enhance self-confidence and motivation. Martinez, Roser, and Strecker (1999) highlight how the format empowers diverse learners, giving them the opportunity to experience reading success and "be a star." In addition, Rasinski and Hoffman (2003) underscore the importance of oral reading for prosody and comprehension, framing performance-based reading as a bridge between technical fluency and deeper literacy engagement.

Synthesising these findings, Griffith and Rasinski (2004) argue that Readers' Theatre constitutes a research-based best practice for building fluency in classrooms. It combines repeated oral reading with authentic performance, thereby supporting both individual literacy development and group cohesion through collaborative practice.

Taken together, the evidence positions reading theatre not only as an instructional method for literacy but also as a social practice that cultivates confidence, participation and shared achievement. By transforming reading into a communal, performative experience, Readers' Theatre fosters group literacy, strengthens social bonds and makes reading a meaningful, collective endeavour.

Inclusive reading initiatives begin with the learner, fostering a personalised reader identity (Rosebrock & Nix, 2020; Venegas, 2018; Hall, 2012; see Fig. 2). An individual's reading profile is shaped by a combination of process-level skills, such as word and phrase recognition, local and global coherence building, identifying text superstructures, and recognising presentation strategies, together with subject-level aspects such as knowledge, participation, motivation, self-reflection and self-concept as a (non-) reader. These are further embedded within the social level, encompassing communicative contexts, family, school, peer and cultural influences, as well as opportunities for action. Factors such as socio-economic status, migration background, prior literary experience, access to linguistic and material resources and varying degrees of self-regulation and motivation in classroom contexts must be reconciled with the needs of the learning community. Inclusive schools work to overcome these barriers (Prengel, 2022) and critically assess possible biases in text selection, accessibility and task design. The Multi-Level

Model of Reading (Rosebrock & Nix, 2020) outlines three interconnected levels:

- Social level—reading as a collective and interactive activity;
- Individual reader level—shaped by personal interests and cognitive abilities;
- Reading process level—determines how texts are understood, processed, and internalised.

During the first years of schooling (and beyond), reading should be for pleasure and not seen as a task. The reading for pleasure literature studies this area in schools and outside of schools. The reasons are related to the construct of motivation. A reader with internal motivation is reading with pleasure. This can motivate them to read more. The effectiveness of reading for pleasure in supporting long-term literacy development depends on the interaction between the reading levels illustrated in Figure 2.

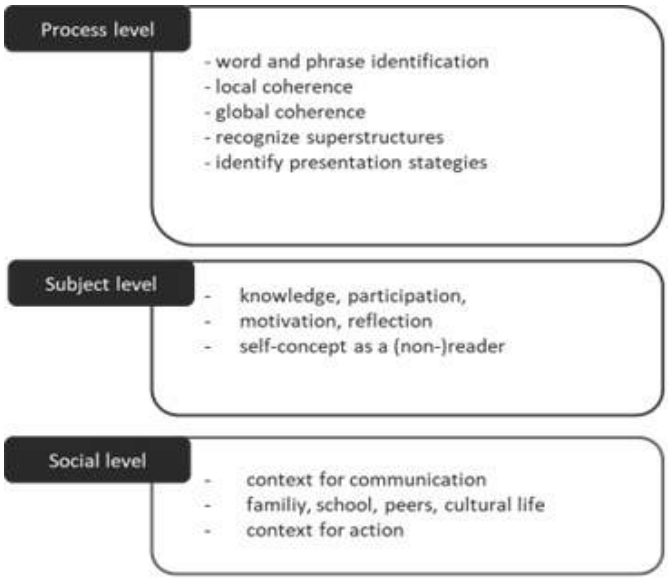

Figure 2: Multi-Level Model of Reading (Giera, 2025, adapted from Rosebrock & Nix, 2020)

In this model, reading is understood as a social activity at the societal level, embedded in communication with family members, school communities, peers, friends, and the broader cultural environment. When art is combined with reading, it provides a space for creative expression that reflects the reading context within a social or community setting. A theatre context using a drama text offers an opportunity to engage all summer school participants in the reading process, reflecting, discussing, rereading, acting, and performing on stage as part of a community project. Every reader's voice can be represented on stage, as each individual interprets the drama text in a unique way. The complex aim of a theatre project is to integrate these diverse perspectives through discussion and performance, ultimately bringing to the stage a shared interpretation that reflects the collective vision of all summer camp participants. Achieving this requires fostering social coherence, enabling the inclusion of different perspectives in performance, and managing these collaboratively in a democratic manner.

III. DESIGN AND METHODS

This section describes the design and methodological approach of this study. It first outlines the sample and recruitment process (3.1), detailing how participants were selected and informed about the project. It then presents the structure and activities of the summer camp (3.2), followed by a description of the play that formed the core of the intervention (3.3). Finally, it explains the overall study design and methods (3.4), including data collection and analysis procedures. Together, these subsections provide a

comprehensive account of how the project was implemented and investigated.

3.1 Sample – Recruitment

The initiative was implemented as a cooperation between the *Family Service Office* of the University of Potsdam and the Chair of *Inclusive German Didactics/Specialisation in Language and Communication* at the University of Potsdam. The project was primarily designed for children aged 7 to 11 who expressed an interest in theatre. 13 children were interested in this theatre project. They did not know each other. No prior experience was required, as all aspects of performance were introduced in a playful, step-by-step approach throughout the project.

The *Uni Camp* was held on the Neues Palais campus, specifically on the lawn and playground, taking place in a large tent. The camp ran from 13 to 21 July 2023 (without weekend), with supervision provided daily from 09:00 to 15:00. Drop-off was possible from 08:30 and pick-up was available until 15:30.

The daily programme was designed to combine enjoyment of play and creative collaboration with a varied set of activities. These included a daily sports session organised by the University Sports Centre; opportunities for physical play, painting, and crafting; and a communal lunch in the university canteen and healthy snacks throughout the day. A total of 15 places were available in the project. The participation fee was set at EUR 60 per child for university employees and EUR 40 per child for students, with a EUR 10 reduction for each additional child from the same family. The following flyer was used as part of the recruitment strategy to inform and attract potential participants to the project (see Fig. 3).

Consent from the legal guardians of all participants was obtained. In addition, the intervention within the drama text, the questionnaire on social coherence, and the procedure of the intervention were reviewed and approved by the Ethics Committee of the University of Potsdam.

Figure 3: The recruitment flyer for the summer camp (source: Giera)

3.2 The Uni Camp—Daily Schedule and Procedures

Each day followed a structured programme designed to balance creative theatre work with opportunities for movement, social interaction, and rest. The daily routine began at 8:00 a.m. with the setup of the theatre space. Children typically arrived between 8:30 and 9:00 a.m., during which time registration was recorded and any relevant information from parents or guardians was communicated. Each child received a name badge, and between 9:00 and 10:00 a.m., guided games focusing on movement and attentive listening were carried out, accompanied by healthy snacks.

At 10:00 a.m., the theatre block commenced with a check-in, a warm-up, an explanation of the day's schedule, and practice sessions interspersed with feedback and reflection. At 12:00 p.m., the group walked together in a "locomotive" formation to the cafeteria, where time was allocated for eating, drinking, free play in a designated play area, and conversation at the table. A communal lunch was served in the campus facilities from 12:00 to 13:00, fostering informal interaction among participants. Project facilitators joined the children for meals, providing additional opportunities for informal exchange.

By 12:45 p.m., the group returned to the theatre tent, located on the university lawns near the playground and sports fields. The afternoon session from 13:00 to 15:00 comprised the second theatre block, enabling participants to deepen their engagement with the play and refine their performance skills. A short period of free play followed, after which, at 1:00 p.m., the children engaged in a check-in ("How am I feeling right now?") and a warm-up exercise thematically aligned with the day's plan. Practice sessions then resumed, with regular opportunities for participants to present their work to the group. Feedback was provided by both children and facilitators, in adherence to the camp's agreed rules:

- We listen to one another;
- Food is for eating and is shared;
- Everyone participates actively;
- No hitting or abusive language.

Shortly before 3:00 p.m., the final reflection phase began. This daily segment was documented, and both the schedule and individual progress were acknowledged and recorded in each child's learning diary. This was followed by free play until parents or guardians arrived for pick-up, at which point the name badge was returned. For the project facilitators, the day concluded with tidying up and dismantling equipment, as well as reflecting on the day's activities. This reflection incorporated the children's documented feedback and the facilitators' own observations, and any necessary adaptations for the next day—either for the whole group or for individual participants—were discussed. The program day ended shortly after 4:00 p.m.

As part of the theatre project, participating children were given the opportunity to immerse themselves in the world of theatrical performance, taking on a variety of roles and characters. Beyond developing artistic skills, the project aimed to encourage children to engage with the topical issue of bullying in a playful yet reflective manner. Through the dramatic process, they explored different behavioural strategies and response options that could be applied in potential bullying situations within both school and social environments (Giera, in press).

The *Stop Bullying!* theatre project employed an educational approach that combined principles of inclusive pedagogy with targeted literacy development. Implemented within a Design-Based Research (DBR) framework, the initiative merged drama-based methods with structured reading activities to strengthen reading skills in children both with and without special educational needs (SENs) (Giera, 2025). Its conceptual basis was informed by Rosebrock and Nix's Multi-Level Model of Reading (2020), which considers the process, subject, and social dimensions of literacy (Giera, in press).

On the process dimension, the project incorporated strategies such as paired reading, choral reading, and repeated rehearsal to improve reading fluency, coherence, and comprehension. The subject dimension was addressed through activities designed to cultivate intrinsic motivation, shape reader identity, and enhance self-concept via embodied, performative learning experiences. At the social dimension, the collaborative processes inherent in theatre-making fostered inclusive group relationships and strengthened a sense of community (Giera, 2025, Giera, in press).

Instructional scaffolding was provided through dedicated reading spaces, individualised feedback, and differentiated learning materials. The intervention also drew on Vygotsky's sociocultural perspective, highlighting the role of social interaction and guided participation in cognitive

growth. Overall, the pedagogical design integrated literacy instruction, arts-based learning, and the cultivation of an inclusive classroom culture (Giera, in press).

3.3 The Play

The project was based on the play *Allein! Tatort Schule/ Alone! School as a Crime Scene* by Claudia Kumpfe (2013), a production that addresses the phenomenon of bullying in schools. The narrative centres on Lotta, a student subjected to systematic exclusion and harassment, thereby giving voice to the emotional and psychological consequences of peer victimisation. However, the play goes beyond the individual case: it reveals how peer pressure and clique loyalty operate as mechanisms that reinforce bullying, compelling students to choose between complicity and resistance. In doing so, Kumpfe highlights the precarious nature of adolescent friendships, raising critical questions about what constitutes "true" or "false" loyalty within social groups.

Used in an educational context, the play functions not only as a dramatic text but also as a pedagogical tool that invites reflection, dialogue, and perspective-taking. By engaging with the characters and their conflicts, students are encouraged to critically analyse the dynamics of inclusion and exclusion and to explore alternative responses to bullying. This pedagogical potential resonates strongly with Boal's (2002) forum theatre methods, which transform audiences into "spect-actors" who can rehearse strategies for change, and with Nicholson's (2011) work on applied drama, which emphasises theatre's ability to cultivate empathy, cooperation, and mutual respect. The play provided the project with a shared narrative framework that was both relatable and transformative, bridging personal experiences of school life with the wider educational aims of promoting social cohesion and democratic participation.

3.4 The Study—Design and Methods

At the beginning and end of the project, an anonymous survey on social coherence was administered, consisting of 11 items. The questionnaire, originally published by the Federal Agency for Civic Education in Germany (Bundeszentrale für politische Bildung), was slightly adapted linguistically for this study. It began with an explanatory text box introducing the topic of bullying:

"The following questions concern bullying. Bullying is different from normal disagreements or conflicts. Bullying occurs when a student is repeatedly harassed or attacked over a longer period of time. It usually also involves a power imbalance between the victim and the perpetrator."

The survey items were as follows: Item 1: "Do you know someone in your school who bullies others?" (response options: *yes* or *no*). Item 2: "Do you know a bullying victim in your school?" (response options: *yes* or *no*). Item 3: "Have you ever been bullied yourself?" (response options: *yes* or *no*). Item 4: "If you have been a victim of bullying yourself, in what form did the bullying attacks against you occur?" Respondents could specify the type of behaviour (e.g., verbal, via mobile phone, physical, online via TikTok or Instagram, etc.). Item 5: "In your opinion, what is the main reason that students bully others?" Multiple responses could be selected from a list including money, appearance, body shape, rivalry, clothing, behaviour, dislike, skin colour, religion, nationality, or origin. Item 6: "How do you react when you see or learn that a student is being bullied by other students?" (multiple responses possible) Item 7: "Do you think you might participate in bullying if a student you like is being bullied?" (Likert scale from *yes* to *absolutely not*). Item 8: "How often have you taken part in bullying one or more other students at your school in the past few months?" (response options ranged from *never* to *several times a week*). Item 9: "How often are you afraid of being bullied by other students at your school?" (response options ranged from *never* to *very often*). Item 10: "Do you know whom you can turn to in your school and who can help you if you are bullied?" (response options: *yes* or *no*). Item 11: "Whom would you turn to if you were or became a victim of bullying?" (multiple responses possible, including friends, police, teachers, parents, etc.).

A second questionnaire, administered at the end of the project, was used to assess the quality of the program from the children's perspective and gather feedback. The survey instrument comprised 20 items designed to evaluate participant engagement, perceived learning outcomes, group dynamics, and overall satisfaction with the youth theatre project. Items on active participation included "I actively participated in the theatre project" (Item 1) and "I actively participated in the theatre group" (Item 14). Organisational quality was assessed with "The project was well organized overall" (Item 2), while enjoyment was captured through "Each day was fun" (Item 3). The adequacy of the project duration was measured with "The length of the project was sufficient" (Item 4). Personal development, particularly self-assessment, was evaluated with "Through the project, I learned to better assess myself and others" (Item 5).

The quality of supervision was explored through "My questions were always answered by the supervisors" (Item 6) and "I always received help from the supervisors" (Item 7). Thematic interest in project topics was assessed with "I was interested in the topic of bullying in the project" (Item 8) and "I was interested in acting in the project" (Item 10). Opportunities for social integration were addressed by "Through the project, I was able to get to know (new) children/young people" (Item 9). Learning experiences were further captured with "Through the project, I learned many new ways/methods to read better" (Item 12), supported by open-ended prompts such as "I can list the following" (Items 11, 13).

Items addressing group dynamics included "I felt comfortable in the group" (Item 15), "I felt like an equal member of the group" (Item 16), and willingness to recommend the project, measured by "I can recommend this project to other children and young people" (Item 17). Reflective prompts at the end of the survey captured suggestions for improvement ("If the project is repeated with young people – what would you change?", Item 18), peak enthusiasm ("This moment excited me the most", Item 19), and any additional comments that participants wished to share ("I would like to add the following", Item 20).

In addition, the two university theatre coaches maintained field diaries to document and reflect on the methods employed, the progress achieved, and any obstacles encountered during the work process. Drama Coaches A and B kept five diaries of the first days, including comments such as "That was good" and "That was challenging," reflecting observations of the whole group. Open and frank feedback from all participants regarding the five drama days in the summer camp was also recorded in Coach A's diary. The sixth and seventh day were the last exercise and final performance on stage.

Furthermore, a roundtable discussion was held at the end of the project, involving the project coordinators, facilitators, parents and participating children. This meeting took place six months after the intervention, providing an opportunity to reflect on the project with the benefit of hindsight.

IV. RESULTS

This section presents the key findings from the summer camp theatre project. It begins with an account of the final performance (4.1). Also, the development of social cohesion within the group is examined in detail (4.2, 4.3), drawing on pre- and post-test questionnaire data, as well as qualitative observations. Finally, reflections from theatre coaches (4.4), parents, and participants (4.5) provide additional insights into the perceived value, challenges, and long-term impact of the project.

4.1 Performance

The ensemble consisted exclusively of children from the summer camp (n = 13). The theatre performance was held on the final day of the holiday programme, Friday, 21 July 2023, from 10:30 to 12:00. Parents and other interested guests were invited to attend the play, which was staged in the university canteen auditorium. The event was open to all members of the university community, as well as external visitors. The children participating in the summer camp and

the entire project team were encouraged by the large audience in attendance. A promotional poster for the performance (see Fig. 4), designed and distributed by the children and project staff across all three university campuses, helped to publicise the event and attract visitors.

Figure 4: A flyer used to advertise the theatre performance

4.2 Participation and Social Coherence

A survey with 13 participants was conducted at the end of the project, after the stage performance. Table 1 presents the post-test means (Ms) and standard deviations (SDs) for 17 questionnaire items evaluating students' perceptions of the "Stop Bullying" theatre project. The response scale ranged from 1 ("applies completely") to 4 ("does not apply at all"), meaning that lower scores indicate more positive evaluations.

Table 1: Means and standard deviation of the items on feedback on the project 'Stop Bullying'

	Posttest M (SD)
	IG (n = 13)
Item 1 I actively participated in the theatre project.	1,6 (0,96)
Item 2 The project was well organized overall.	1,2 (0,44)
Item 3 The individual days were fun.	1,3 (0,63)
Item 4 The length of the project was sufficient.	1,5 (0,78)
Item 5 Through the project, I learned to assess myself and others better.	1,5 (0,66)
Item 6 My questions were always answered by the supervisors.	1,3 (0,73)
Item 7 I always received help from the supervisors.	1 (0)
Item 8 The topic of bullying interested me in the project.	1,5 (0,66)
Item 9 Through the project, I was able to meet (new) children/young people.	1 (0)
Item 10 Acting in the theatre interested me in the project.	1,4 (0,51)
Item 12 Through the project, I learned many new ways/methods for reading better.	1,5 (0,88)
Item 14 I actively participated in the theatre group.	1,5 (0,88)
Item 15 I felt comfortable in the group.	1,1 (0,28)
Item 16 I felt like an equal member of the group.	1,4 (0,87)
Item 17 I can recommend this project to other children and young people.	1,2 (0,38)

Note: MIN 1 (applies completely) / MAX 4 (does not apply at all) (student survey), IG = intervention group

Overall, the results demonstrate high levels of agreement with nearly all statements, reflecting the positive reception of the project. Several items received the lowest possible mean score of 1.0, indicating unanimous strong agreement among participants. This includes *Item 7* ("I always received help from the supervisors") and *Item 9* ("Through the project, I was able to meet (new) children/young people"), both of which had no variability (SD = 0). These findings suggest that the project was highly successful in fostering social connections and providing consistent supervisory support.

Other highly rated aspects include Item 15 ("I felt comfortable in the group"; M = 1.1, SD = 0.28) and Item 2 ("The project was well organized overall"; M = 1.2, SD = 0.44). Enjoyment of the activities was also evident, with Item 3 ("The individual days were fun") achieving a mean of 1.3 (SD = 0.63).

Slightly higher—but still positive—mean values were observed for Item 4 ("The length of the project was sufficient"; M = 1.5, SD = 0.78), Item 5 ("I learned to assess myself and others better"; M = 1.5, SD = 0.66), and Item 8 ("The topic of bullying interested me"; M = 1.5, SD = 0.66). These slightly higher scores may suggest small differences in how strongly students perceived these specific benefits.

Importantly, the recommendation rate was very high, with Item 17 ("I can recommend this project to other children and young people") scoring M = 1.2 (SD = 0.38). This indicates that the majority of participants viewed the project as worth sharing with peers.

So, the quantitative evaluation (see Table 1) shows that participants in the intervention group (n = 13) evaluated the "Stop Bullying" theatre project very positively, with mean scores close to 1 ("applies completely") across nearly all items. Particularly high agreement was found for Item 7 ("I always received help from the supervisors") and Item 9 ("Through the project, I was able to meet (new) children/young people"), with both receiving a mean of 1.0 and having no variability, suggesting unanimous positive experiences. Similarly, students reported feeling comfortable in the group (Item 15, M = 1.1, SD = 0.28) and considered the project well organised (Item 2, M = 1.2, SD = 0.44). The majority would recommend the project to others (Item 17, M = 1.2, SD = 0.38).

The open-ended responses provide additional insights. For Item 11 ("I can list the following"), participants mentioned enjoying the games ("the games were great"), wanting the experience to last ("forever"), and appreciating the fun ("that I enjoyed it"). Under Item 13, students reflected on their reading skills and personal feelings ("I was happy," "I was able to read well afterwards," "because you read the role"), indicating both emotional and skill-related benefits.

When asked what they would change if the project were repeated (Item 18), five respondents said "nothing," while others suggested a longer duration, more lines for certain roles, fewer speaking parts and more games. Opinions on project length varied, with some finding that the project took up too much time in one day, while others wished it lasted longer overall.

The moments that excited students the most (Item 19) were largely related to performing: multiple responses (nine time) mentioned the final performance ("the performance," "when we performed!"), specific scenes ("the bullying scenes") and active participation ("when it was my turn"). Games and the entire experience ("everything") were also highlighted.

Additional comments (Item 20) reaffirmed the positive reception, including "I enjoyed it," "keep it up," and "it was really nice!"—with some stating "nothing," indicating no further remarks. Overall, the qualitative feedback reinforces the quantitative findings, suggesting that the project was both enjoyable and meaningful, with only minor suggestions for structural adjustments.

The following Table 2 displays the mean scores (M) and standard deviations (SD) for the intervention group (IG; n = 13) on four items assessing social coherence in the theatre group, measured at pre-test and post-test only with four items for the feedback survey.

Scores ranged from 1 ("applies completely") to 4 ("does not apply at all"), with lower scores indicating stronger agreement. At pre-test, mean values for Items 14, 15 and 17 were uniformly 2.0 (SD = 0), suggesting moderate agreement, while Item 16 ("I feel like an equal member of the theatre group") had the highest possible score of 4.0 (SD = 0), indicating no perceived equality in membership at the outset.

Post-test results reveal marked improvements across all items. Participation in group work (Item 14) improved from M = 2.0 to M = 1.5 (SD = 0.88), $t(12) = 1.47$, $p = 0.167$. Comfort during group work (Item 15) increased from M = 2.0 to M = 1.2 (SD = 0.44), $t(12) = 9.92$, $p < 0.001$, and feelings of equality in the group (Item 16) showed the most substantial change, decreasing from M = 4.0 to M = 1.2 (SD = 0.60), $t(12) = 15.42$, $p < 0.001$. General comfort in the theatre group (Item 17) also improved, increasing from M = 2.0 to M = 1.1 (SD = 0.28), $t(12) = 13.83$, $p < 0.001$.

Table 2: Mean scores and standard deviations for items on social coherence in the theatre group

	Pretest M (SD) IG (n = 13)	Posttest M (SD) IG (n = 13)
Item 14 In my theatre group, I actively participate in group work.	2 (0)	1,5 (0,88)
Item 15 In my theatre group, I feel comfortable during group work.	2 (0)	1,2 (0,44)
Item 16 In my theatre group, I feel like an equal member of the theatre group.	4 (0)	1,2 (0,60)
Item 17 In my theatre group, I feel comfortable.	2 (0)	1,1(0,28)

Note. MIN 1 / MAX 4 (student survey), IG = intervention group
1 = applies completely / 2 = applies quite a lot / 3 = applies a little / 4 = does not apply at all

Overall, the data indicate that following participation in the project, students reported higher levels of active participation, comfort, equality and belonging within the theatre group, with particularly notable gains in perceived equality (Item 16). Based on the Wilcoxon signed-rank tests, all four items show highly significant improvements from pre-test to post-test. Since all p-values are far below 0.001, the probability that these changes occurred by chance is extremely small. This confirms that the intervention produced a statistically significant increase in active participation, comfort, equality and overall well-being in the theatre group.

In summary, the intervention group's feedback reflects overwhelmingly positive experiences across the organisational, educational, and social dimensions of the project. The consistently low means and small standard deviations highlight strong consensus among participants, suggesting that the "Stop Bullying" theatre project was both engaging and effective at meeting its intended goals.

4.3 Development of Social Cohesion

The means and standard deviations for the four social coherence (bullying) items are presented in Table 3.

Table 3: The means and standard deviations of the items on social coherence (bullying)

	Pre test M (SD) IG (n = 13)	Post test M (SD) IG (n = 13)
Item 1 Do you know someone in your school who bullies others?	1,4 (0,51)	1,5 (0,52)
Item 2 Do you know a bullying victim in your school?	1,5 (0,52)	1,5 (0,52)
Item 3 Have you ever been bullied yourself?	1,8 (0,44)	1,8 (0,44)
Item 10 Do you know whom you can turn to in your school and who can help you if you are bullied?	1 (0)	1,25 (0,45)

Note. MIN 1 / MAX 2 (student survey), IG = intervention group, 1 = yes / 2 = no

Across the intervention group (n = 13), mean values were generally closer to 1 (yes) than to 2 (no) at both pre-test and post-test, indicating a higher frequency of affirmative responses to the bullying-related statements. Paired-samples t-tests showed no statistically significant differences from pre-test to post-test for any item. Item 1 ("Do you know someone in your school who bullies others?") increased slightly from 1.40 (SD = 0.51) to 1.50 (SD = 0.52), $t(12) = 2.09$, $p = .059$. Item 2 ("Do you know a bullying victim in your school?") remained unchanged, $t(12) = -0.48$, $p = 0.640$, as did Item 3 ("Have you ever been bullied yourself?"), $t(12) = -0.70$, $p = 0.500$. Item 12 ("Do you know whom you can turn to…") showed a small, non-significant increase from 1.00 (SD = 0.00) to 1.25 (SD = 0.45), $t(12) = -1.10$, $p = 0.293$.

Overall, the data of Table 3 suggest relatively stable patterns in students' reports of bullying experiences and awareness of available support.

In the next step of the analysis, the author organised all questionnaire items into five thematic categories based on their content. The reason for this was to combine the closed and Likert-scale questions with the open-ended questions. The first category, *Personal Involvement with Bullying*, included Items 1, 2, and 4, which addressed direct experiences and awareness of bullying incidents. The second category, *Sensitivity to Bullying*, comprised Items 3, 5, 10, and 11, focusing on personal experiences as a victim, perceived reasons for bullying, and awareness of individuals involved. The third category, *Reflective Behaviour in Bullying*, encompassed Items 6, 7, and 8, which examined participants' responses to bullying and their self-reflection on potential involvement. The fourth category, *Fear of Bullying*, was represented by Item 9, assessing the frequency of bullying-related fear. The final category, *Social Interaction about Bullying*, consisted of Items 12 and 13, which explored knowledge of and access to support networks in bullying situations.

- *Personal Involvement with Bullying with Items 1, 2 and 4*

Item 1 ("Do you know someone in your school who bullies others?"; response options: *yes* or *no*) indicates that the number of students who reported knowing a bully remained largely unchanged.

Item 2 ("Do you know a bullying victim in your school?"; response options: *yes* or *no*) shows a decrease in the reported number of known bullying victims (from 1.50 to 1.53; higher scores indicate fewer reported victims).

Item 4 ("If you have been a victim of bullying yourself, in what form did the bullying attacks against you occur?") yielded the following result: in both assessments, the response options "via mobile phone," "other," and "via the internet" were never selected. This may be explained by factors such as the participants' age and limited access to social media. At a younger age, bullying is more likely to occur in person, such as through verbal insults (two students who reported no change and already had direct bullying experience) or physical aggression (one student reporting bullying experience out of three students—two with direct and one with indirect experience). The number of students stating that

they had no direct experience with bullying increased from four to five.

- *Sensitivity of Bullying with Items 3 and 5*

Item 3 ("Have you ever been bullied yourself?") indicates that the proportion of respondents who reported having experienced bullying themselves remained unchanged (M = 1.77). Item 5 ("In your opinion, what is the main reason that students bully others?") shows minimal change between pre-test and post-test. The total number of responses increased slightly (from 37 to 40), with some participants altering their choices. This shift caused a minor redistribution among categories, but the overall pattern remained largely stable. In the pre-test, the most frequently selected reasons for bullying were *appearance/body shape*, *skin colour/religion/origin*, and *dislike*. In the post-test, these categories were still among the most common, except that *dislike* decreased by four mentions and was replaced by *clothing*—this was possibly influenced by the theatre performance, in which a character is bullied because of their clothing.

- *Reflective Behaviour in Bullying with Items 6, 7 and 8*

Item 6 ("How do you react when you see or learn that a student is being bullied by other students?") shows the following pattern: Positively, none of the students reported being bullies themselves (at least in their own perception) or being in agreement with bullying. On the other hand, more students acknowledged that they only observed bullying without intervening (increasing from 1 to 3) or walked away because they believed the victim could resolve the situation independently (increasing from 0 to 2). Unfortunately, the proportion of students recognising that victims should be helped decreased (from 5 to 3), particularly among those who had previously reported doing nothing. A majority of students attempted to help victims in some way or sought assistance from an adult. In the post-test, two students who had not previously sought help from an adult reported doing so; however, two others lost trust in adults as a source of help. A similar pattern was observed for personal initiative: the number of students who took action dropped from 12 to 7. Overall, responses in the post-test were more varied and dispersed than those in the pre-test.

For Item 7 ("Do you think you might participate in bullying if a student you like is being bullied?"), results in both the pre-test and post-test show that almost all students agreed that they would never participate in bullying, although uncertainty about their own potential involvement increased in the post-test. This may reflect a heightened awareness of the boundaries between acceptable behaviour and bullying. The small increase in "active" participation should not necessarily be interpreted as an endorsement of bullying but rather as an indication that students reflected more critically on their own actions and considered them in relation to bullying.

In pre-test, Item 8 ("How often have you taken part in bullying one or more other students at your school in the past few months?") revealed that only three students admitted to having been bullied. The known victims of bullying reported being targeted physically or verbally. Four other respondents indicated that they had never been bullied. In the post-test for Item 8, the number of bullying victims remained unchanged, as did the types of bullying reported (verbal or physical). Only one student reported not being a victim but still indicated knowledge of physical bullying. Several explanations are possible. The student may have misunderstood the question (e.g., interpreting it as "What types of bullying do you know?" rather than "How have you personally been bullied?"). Alternatively, the student may know about bullying incidents through another person, without being directly affected, but still be knowledgeable about the topic (indeed, this participant reported knowing both a bully and a victim in Items 1 and 2). Another possibility is that the student experienced physical bullying but did not perceive it to be severe, particularly when compared to other known cases, or preferred to classify it merely as teasing rather than as bullying, thereby avoiding identification as a "bullying victim."

- *Fear of Bullying with Item 9*

In the pre-test for Item 9 ("How often are you afraid of being bullied by other students at your school?"), only one participant—who also

reported being a victim of bullying—indicated experiencing fear more than "rarely." The two other identified bullying victims did not report being affected by fear. In the post-test, the overall pattern shifted. While six participants still reported having no fear of bullying (although the composition of this group changed), more students indicated feeling afraid "sometimes" or "fairly often." Notably, the student who had reported being "often" afraid in the pre-test now rated their fear level as only "fairly often."

- *Social Interaction about Bullying with Items 10 and 11*

All students responded to Items 10 ("Do you know whom you can turn to in your school and who can help you if you are bullied?") and 11 ("Whom would you turn to if you were or became a victim of bullying?"). Parents and teachers were the most frequently named sources of support, followed by friends, pastoral care teachers, and other relatives. Neither the police nor internet forums were mentioned as potential contacts, which may be explained by the participants' age. Importantly, all respondents indicated at least one person they could turn to in case of problems.

Post-test: Responses to bullying in the post-test were more varied, but—as in the pre-test—no participant reported participating in or approving of bullying. The majority stated that they would seek help from an adult or intervene directly. Other options were selected by only one or two participants, suggesting greater individual reflection on the issue. Notably, one participant who previously reported never having witnessed bullying changed their answer, indicating improved recognition of bullying situations. While more participants answered Item 10 in the post-test, three students now reported not knowing whom they could ask for help. Nevertheless, all respondents named at least one contact person they could approach if they were affected by bullying. As in the pre-test, teachers and parents were mentioned most frequently. Other sources of help declined in frequency, and the police and online contacts continued not to be named as potential sources of support.

4.4 Field Diaries from Coaches

The coaches' diaries are presented here in a condensed form. Day 6 was dedicated to final rehearsals on stage, with emphasis on refining performance elements and consolidating learning from previous sessions. Day 7 was the performance day, during which the complete play was staged before an audience, representing the successful culmination of the project.

Figure 5: A performance scene for bullying

4.4.1 Shortened Diary of Drama Coach A

Day 1: The group displayed high heterogeneity in both age and reading ability, with approximately 75% reading non-fluently. Warm-up games, particularly those involving music, were well received. Several children shared personal accounts of bullying, which were met with openness and empathy. Role allocation was based

on the children's preferences, followed by a read-through of the first scenes. In the daily reflection, the children expressed fears about the upcoming performance. As rehearsals took place outdoors, a wish for more shaded areas was voiced, which also remained an issue during the afternoon session due to the heat. Nevertheless, all agreed—by a unanimous show of hands—that the performance should be their shared goal. All participants felt they had "earned a crown" for the day, as everyone had read and acted extensively. The rehearsals proceeded well, with many children already identifying with their assigned roles and planning to bring costumes and props the next day. Coach A also observed an improvement in reading fluency from morning to afternoon.

Day 2: Parents received resource materials on bullying prevention from the police. Role preferences were finalised through child-led decisions, using discussions, drawing lots, or games, which in some cases led to double casting. Rehearsals progressed to Scene 5, with each group receiving feedback and expressing satisfaction with their roles. Both Coach A and the children considered the rehearsals to be highly successful. Once again, all awarded themselves a "crown" for their efforts. A student playing the main role was singled out for praise due to their dedicated practice. Some students could recite lines from memory. Warm-up games continued to be popular. One child experienced mild stomach pain, which delayed rehearsals slightly, but the group responded with care and empathy.

Day 3: Several children reported practising their lines over the weekend, with notable increases in reading motivation and engagement. One participant withdrew from the project, while others took initiative in developing their roles, including incorporating musical elements. Warm-up routines became established, and rehearsals continued with some double-cast roles. Small practice groups were formed, which proved more effective for reading and text comprehension than working in the full group. Before lunch and again in the afternoon, scenes were presented and feedback was provided, allowing coaches to make better progress with rehearsals. On this day, a different child was crowned by the group in recognition of exceptional effort and marked improvement in reading and acting. According to the group, there were "no stupid moments" during the day. All scenes were run through once, except for the bullying scenes, which were postponed. Some children expressed a dislike for the two songs included in the play and were unsure whether they could master them with piano accompaniment by the end of the week. Overall, the day was considered successful.

Day 4: Morning games and rituals continued to provide structure. Focus shifted to the second half of the play, with rehearsals held on stage for the first time, generating excitement. Challenges arose with stage positioning in group scenes. The first song was rehearsed with piano accompaniment, and all scenes were read through once. During rehearsals, frustration and minor conflicts emerged but were resolved through immediate group discussion. The bullying scenes were practised several times. Coach A found the follow-up discussions on bullying emotionally intense for the group, as many shared deeply personal experiences, and some were moved to tears. Afterwards, both the songs and acting scenes went very well. Occasional fooling around occurred, and during the second rehearsal block, another child was injured during play, delaying the afternoon session.

Day 5: The day began with games, followed by self-reflection and character-strength activities. A second song was introduced, accompanied by percussion. Rehearsals progressed efficiently, covering multiple scenes. In the afternoon, overexcitement and minor disputes disrupted the session, but these were resolved via a group discussion. Reflection rounds revealed mixed feelings due to conflicts and fatigue, though overall rehearsal progress was positive. The children were already highly excited about the performance. At the end of the day, all expressed feelings of happiness mixed with anticipation. Encouragingly, all scenes and songs were rehearsed smoothly. Compared to the previous day, this was considered a particularly productive session.

Day 6: Final rehearsals were held on stage, with a focus on refining performance details and consolidating learning from previous sessions.

Day 7: Performance day—The complete play was staged before an audience, marking the successful culmination of the project.

4.4.2 Shorten Diary of Drama Coach B

Day 1: The group was highly heterogeneous in terms of both age and reading ability. Approximately 75% of the children did not yet read fluently; only a few—mainly older participants and the youngest—were able to read with fluency and expression, demonstrating comprehension and active engagement in discussions on bullying. While most children expressed excitement about the play, one child showed little interest in reading or acting, appeared tired, and participated minimally in warm-up activities. Warm-up games were generally well received, especially when accompanied by music. The role of "theatre child," who read instructions aloud and made optional content choices, was particularly popular. In movement-based games, children increasingly performed their roles with energy and creativity. Before casting, the group shared personal experiences with bullying. Several accounts revealed serious incidents, including daily physical aggression and persistent verbal harassment. These disclosures were met with attentiveness and empathy from peers. Role allocation involved reading character descriptions aloud, allowing each child to select and note two preferred roles. The first three scenes were then read in distributed roles, after which children took their scripts home to consider their choices further.

Day 2: On the second day of the intervention, parents and guardians received an information sheet containing recommendations for non-fiction books, lectures, and educational websites on the topic of bullying. This was received with appreciation. We made a point of noting that the subject might arise over the weekend and emphasised our openness to further discussion. Some children expressed the same preferences for particular roles. Small groups formed based on role preference discussed among themselves who should take on the part. Decisions were reached either through discussion, by drawing lots, or—in one case—by racing each other. It was important to us that these decisions were made by the children themselves rather than by the facilitators. This process resulted in a few double castings but otherwise a balanced distribution of roles. Two children who did not receive a "main" role were assigned to read either the female or male parts of the monologues. While this was accepted somewhat hesitantly, the significance of these roles was reinforced. After the lunch break, the first rehearsal of the opening scenes began. Within 60 minutes of rehearsal, performances had progressed to Scene 5. All groups received applause and constructive feedback. Everyone expressed satisfaction with their role, and many were already thinking about costumes. At the end of the day, we ensured that all role name tags were returned so that the characters could be completely set aside over the weekend.

Day 3: After the weekend break, the third day of the intervention began. During the drop-off, it became clear that many children had spent the weekend reading their lines, rehearsing, highlighting their scripts and even considering possible costumes. One case in particular was especially moving. A mother reported that her daughter had always found rehearsing, especially for poetry, difficult, and was generally reluctant to memorise texts. In contrast, within the project, she wanted to practise reading at home to perform her role well. She also felt confident enough to deliver a monologue in front of an audience. I asked the mother whether her daughter enjoyed singing, to which she replied "no". However, I see potential here, as singing allows text to be learned in combination with melody. The mother was unsure whether this would work but expressed happiness that her daughter looked forward to attending the theatre project each morning. In another case, it became apparent that one child would not continue participating in the project. The child had shown little interest during the first two days and did not wish to integrate into the group. A third case involved a child who had

strong reading skills but, despite various family efforts, rarely visited the library and was generally reluctant to read. In his peer group and grammar school class, book reading was not common. His mother reported that one evening he read the entire play because he wanted to know how his character developed. He was proud to have such an appealing role and even considered how the music could be arranged. He plays the piano and selected a song from the piece to use both for scene-setting and as a short interlude during set changes. He received considerable feedback from the group because he already knew most of his lines by heart. Initially, this boy did not want to perform on stage, but he became proud to have a role with extensive dialogue. Overall, the theatre sessions had already become ritualised. The children enjoyed the warm-up games at the start of the day and participated actively. All rehearsed their parts, with some roles being double cast.

Day 4: The pre-theatre warm-up games were movement-based and well received, with all participants joining in and laughing together (e.g., a relay game). The theatre session began, as always, with the greeting, "It's nice that you are here." Picking up the cards from the floor had already become a ritual, and the children were increasingly confident in using expressive gestures. The morning discussion was used to outline the day's schedule, providing structure for the children, who could refer back to the plan displayed on the wall at any time. They also used the morning circle to share personal wishes, which were then integrated into the day's activities. On the fourth day, the children were particularly eager to know how the play continued, as before the weekend and on Monday, only the first half had been read and rehearsed. The day's focus was, therefore, on reading and performing the second half of the play. This was challenging for everyone and required patience and concentration, but it also offered the opportunity for them to physically position themselves fully in the performance space. For the first time, we could step onto the stage and rehearse several scenes there. This was a special moment for the children, as they could now envision the actual performance space. Some spectators were present, as people eating in the canteen could also watch from the stage area. Initially, the children found this unfamiliar; even the pianist preferred to rehearse with the curtain closed. However, this hesitation gradually eased after a few minutes, though not entirely. The main challenge for the children was not reading the unfamiliar text but positioning themselves correctly on stage, particularly in Scene 20, where all characters appear together. We also rehearsed the first song with piano accompaniment, played by one of the children. As this child could not yet coordinate the cue for singing, another boy from the group, who plays an instrument, stepped in to signal the entry for the whole group. This created an exciting moment when the curtain opened to reveal Lotta standing on a chair, surrounded by the other children, singing together with the piano. In the afternoon, rehearsals moved to the outdoor theatre space, focusing especially on scenes that were still new. By the end of the day, all scenes had been read through once; the first half of the play had been rehearsed again, and the second half was performed for the first time. It became clear that the duo David and Wethmal were not yet well coordinated, with Child 1 feeling overruled by David—something that even caused tears at home. The next day was scheduled for bringing in costumes and props as agreed.

Day 5: The morning began with a movement-based activity—a traditional egg-and-spoon race—followed by a snack break. The theatre session then commenced, following the established ritual of the greeting "It's nice that you are here," after which one of the children led the group in a game. The children expressed a wish to rehearse more and spend additional time on stage. After a short morning meeting, during which each child was asked to name two or three strengths of themselves and of their character, the second song was introduced. First, it was sung for the group, then the refrain was practised with the addition of rhythm using a jingle bell. Each child selected a percussion instrument of their choice. Once the rhythm was rehearsed, the singing was added. The combination proved enjoyable and the group quickly engaged in the singing. On the way to the stage—a short five-minute walk—the children

used the time to sing both songs several times, which provided additional rehearsal. Upon arrival, stage markings were placed, and the child pianist played the opening song as a cue for the start of the performance. The 60-minute rehearsal session before lunch was used effectively, allowing seven scenes to be performed. At the end of this session, the children voted democratically to continue rehearsing. As a result, the first two scenes and Scene 3 (the bullying scene) were performed again. Lunchtime was calm, with growing friendships evident as certain children consistently chose to sit together. After lunch, the children enjoyed free play in the games area. Following repeated requests, the group returned to the stage earlier than planned to practise the first song with piano accompaniment, which went smoothly. However, the subsequent scene rehearsals were more challenging. Many children were overly excited, engaging in playful mischief, and a few accidental falls occurred. As a result, the stage rehearsal was concluded early, and the children were rewarded with ice cream on the lawn, where they then played freely for about 20 minutes. Additional movement-based games (e.g., "Fire, Water, Storm") were offered, which the boys in particular enjoyed. Meanwhile, the girls took care of the youngest child present—a nearly three-year-old—by building a castle out of cardboard boxes and blankets. This activity, however, led to a disagreement. The conflict was addressed in the full group circle, with both parties sharing their perspectives, recognising that they had hurt the other, and offering mutual apologies. They then exchanged compliments, with guidance from one of the theatre facilitators. As on every day, the session concluded with a reflection round. Children drew "reflection cards" with sentence starters such as *"If today were a weather forecast, it would be…"*. In the next step, a talking ball was passed around, allowing each child to share something that had gone well and something that had not. The ball could also be passed on without speaking. In this reflection, it emerged that some children did not enjoy the day as much due to the earlier disputes and an accident involving one child's hand. Additionally, several reported having slept poorly the night before and felt tired during the day. Despite this, the rehearsals were generally well received by the group and unlike the previous day, no one requested small-group rehearsals.

4.5 Reflections from Coaches, Parents and Participants

The follow-up meeting for the Summer Camp took place on April 9, 2024, with six parents, five children, and the project leaders participating. The session, recorded by Sara Hauser, began with a 30-minute screening of selected video excerpts from the final performance. This was followed by an open discussion guided by the central question *"What remains?"*.

From the students' perspective, reflections were predominantly positive. The musical elements, particularly the songs, were highlighted as especially enjoyable. The project as a whole was perceived as a source of joy, with both the rehearsal process and the final performance described as rewarding experiences. The nervousness felt prior to the performance was remembered as intense yet ultimately positive. The collective participation of all involved was considered a valuable aspect of the project. Students reported sharing their experiences at school and in their classes, where reactions were described as "cool" and the class teacher expressed delight and offered praise. When asked about possible changes in reading and presentation skills, the students generally reported no significant developments. One student indicated that they had already enjoyed presenting before the project and continued to do so.

Parents' feedback further underscored the positive impact of the project. One parent observed that a previously introverted child had become more outgoing. Another parent emphasised the project's importance for supporting language development.

V. DISCUSSION

The evaluation of the *Stop Bullying* theatre project demonstrates that the intervention was highly effective in fostering social cohesion, promoting inclusive group processes through

theatre pedagogy and engaging participants in literacy-related practices via reading theatre. The combined quantitative survey data, qualitative student feedback, observational notes from Coaches A and B, and reflections from parents and children at the follow-up meeting provide a robust, triangulated evidence base for these conclusions.

5.1 Social Cohesion

Across all data sources, substantial gains in social cohesion were observed. Quantitative measures revealed statistically significant improvements in active participation, comfort, equality, and group belonging, with the largest change in perceived equality (Item 16: M = 4.0 to M = 1.2, $p < .001$). At the outset, participants did not perceive equal membership in the theatre group; by the project's end, they reported strong agreement that they were equal members. These findings were reinforced by qualitative feedback, in which children described enjoying shared activities, valued "everyone being involved," and identified the final performance as a collective highlight. Coaches observed the emergence of supportive behaviours, such as caring for peers in moments of difficulty, resolving conflicts through group dialogue and celebrating achievements collectively (e.g., "earning a crown" in Coach A's notes). Coach B provided further detail on the development of friendships, the establishment of group rituals and structured peer-led conflict resolution. Parents corroborated these observations, noting marked increases in confidence among introverted children and the inclusive nature of the group dynamic. Together, these findings suggest that the project did not merely facilitate social interaction but actively transformed the group into a cohesive, mutually supportive community.

The findings of the "Stopp Mobbing!" summer camp can be meaningfully interpreted through the three-dimensional model of social cohesion proposed by Chan et al. (2006), which distinguishes structural, relational and cultural components. This framework is further supported by Schiefer and van der Noll's (2017) synthesis of the concept and Fonseca et al.'s (2019) emphasis on multidimensional integration processes.

The project created clear, equitable structures for participation, exemplified by democratic role allocation processes and the use of group rituals to ensure that all children—regardless of age, reading ability or prior experience—could contribute meaningfully. Quantitative results show a marked increase in perceived equality within the group (Item 16: pre-test M = 4.0, SD = 0 → post-test M = 1.2, SD = 0.60, $p < 0.001$). This gain reflects the successful operationalisation of structural cohesion, as described by the United Nations (2023) and the Council of Europe (2022, see Fig. 1), where fairness in group processes and opportunities for active involvement foster a sense of equal standing among participants.

Relational cohesion, which involves the development of trust, social bonds and reciprocity (Fonseca et al., 2019), was strongly evident in both the quantitative and qualitative findings. All participants agreed that they had met new peers through the project (Item 9: M = 1.0, SD = 0), and parents noted that some previously withdrawn children had become more open and communicative. Group rituals such as the "crown of the day" and collective reflection circles helped to reinforce mutual recognition and empathy. These processes mirror the UN DESA (2023) conceptualisation of cohesion as sustained interpersonal solidarity built through repeated shared experiences.

The cultural aspect of cohesion—shared values, norms and identity (Schiefer & van der Noll, 2017)—was cultivated through the common goal of staging the final performance and the unifying theme of anti-bullying. The narrative allowed participants to embody multiple perspectives (victim, perpetrator, bystander, helper), encouraging moral reflection and empathy. Post-test data showed significant improvement in comfort within the group (Item 17: M = 2.0 → M = 1.1, $p < 0.001$), suggesting that the performance process not only reinforced collective identity but also deepened emotional bonds.

Overall, the project exemplifies how arts-based, socially grounded interventions can strengthen all three dimensions of social cohesion in a short time frame. The structured yet flexible rehearsal process provided the structural foundation, the collaborative creative work and peer support fostered relational trust, and the shared thematic and performative journey reinforced cultural belonging. These outcomes are consistent with the Council of Europe (2022) assertion that participatory arts can be powerful tools for building cohesive, democratic communities.

5.2 Theatre Pedagogy for Promoting Social Cohesion

Theatre pedagogy played a central role in achieving these social outcomes. The structured, participatory design—combining daily warm-up games, collaborative role allocation, rehearsals, and the shared goal of a public performance—created an environment in which all members had a voice and a stake in the outcome. Quantitative ratings indicated that acting in the theatre was interesting (M = 1.4), the project was well organised (M = 1.2), and supervisory support was consistent (M = 1.0). The thematic focus on bullying was also well received (M = 1.5), prompting both collective discussion and personal reflection, as noted by both coaches. Coach A highlighted the motivational power of shared goals and group recognition, while Coach B emphasised the role of rituals and participatory decision-making in reinforcing cohesion. Parents saw the theatre process as providing a safe, creative space in which children could take social risks and express themselves confidently. The evidence suggests that the pedagogical approach did more than structure learning; it embedded social inclusion into the creative process itself, making collaboration and mutual respect integral to the project's functioning.

The "Stopp Mobbing!" summer camp illustrates how theatre pedagogy can serve as both a methodological framework and a social catalyst for fostering cohesion. Drawing on the principles of process-oriented theatre (Boal, 2002) and inclusive arts education (Giera, 2025), the project embedded pedagogical strategies that promoted collaboration, empathy, and a sense of belonging.

Role allocation was negotiated through child-led discussions, lotteries, or playful competitions, ensuring that the process was participatory rather than imposed. This reflects the theatre–pedagogical principle of co-authorship (Neelands, 2009), in which learners actively shape the creative process, thereby reinforcing their agency and investment in the group's success. Such shared decision-making processes contributed directly to the increases in perceived equality noted in the quantitative findings.

The project's warm-up games, improvisation exercises and role-switching activities leveraged theatre's capacity to integrate physicality, voice and emotional expression. This aligns with the idea of embodied pedagogy (Perry & Medina, 2011), where learning is grounded in bodily experience, allowing participants to connect cognitively and emotionally with both content and peers. The anti-bullying theme particularly benefitted from this approach, as students could explore sensitive social dynamics within a safe, fictional frame, thereby promoting empathy and perspective-taking—key elements in building relational cohesion.

Daily group rituals, such as the greeting "It's nice that you are here," the "crown of the day," and structured reflection rounds, provided predictable interaction patterns that fostered trust and stability (Schiefer & Noll, 2017). Reflection sessions encouraged meta-cognitive awareness of group dynamics and individual contributions, aligning with the social–pedagogical emphasis on guided self-evaluation (Prengel, 2022). Parents' observations of increased openness in introverted children suggest that this ritualised, supportive environment contributed to the children's willingness to engage socially.

By linking the artistic aim (a public performance) with the social aim (building a cohesive group), the project exemplifies the dual focus of contemporary theatre pedagogy (Boal, 2002). The final performance acted as a collective achievement, reinforcing cultural cohesion and

group identity. This echoes Nicholson's (2011) argument that theatre's communal, time-bound nature inherently strengthens social bonds.

In sum, the project's theatre–pedagogical strategies not only facilitated artistic expression but also actively generated conditions for social cohesion. These methods—co-construction, embodied engagement, ritualised interaction, and integrating aesthetic with social objectives—can be considered transferable elements for other educational and community contexts seeking to promote inclusion and solidarity.

5.3 Reading Theatre for Fostering Group Literacy

Although explicit self-reported improvements in reading skills were modest, the data indicate that the project fostered conditions conducive to literacy engagement. Quantitative responses showed agreement that new ways of reading were learned (M = 1.5) and qualitative feedback referenced being "able to read well afterwards" and connecting reading ability with role preparation. Coaches observed notable changes in reading engagement: Coach A reported immediate improvements in fluency within the same day and identified small-group rehearsals as particularly effective, while Coach B described reluctant readers who practised scripts at home, memorised lines and used musical elements to aid text learning. Parents also linked the project to language development and improved verbal confidence, even if children themselves did not perceive dramatic changes in reading ability.

By participating in multi-layered activities that combined group reading, theatrical staging and public performance, students developed both cognitive and socio-emotional skills within an inclusive and non-stigmatising setting. Although improvements in standardised reading measures were limited, notable progress was observed in levels of engagement, self-confidence and cooperative learning. These findings highlight the promise of arts-integrated, socially grounded interventions in promoting inclusive literacy practices and tackling bullying by fostering empowerment and empathy (Giera, in press). It is plausible that the significant gains in group comfort and equality observed under 2.1 enhanced students' willingness to engage with reading aloud and performance-based literacy tasks, thereby indirectly supporting literacy development.

Integrating reading theatre into the "Stopp Mobbing!" project provided a structured yet creative pathway for developing literacy skills in a socially embedded context. Unlike isolated reading exercises, the theatrical format required participants to engage with text as a living script, combining decoding skills with prosody, comprehension, and emotional expression. This aligns with research on reader's theatre (Martinez, Roser & Strecker, 1998), which emphasises repeated oral reading in a performance context as a means to improve fluency and motivation.

Scenes were rehearsed in pairs, small groups and as a whole ensemble, fostering peer-supported learning. Participants assisted each other with pronunciation, timing, and interpretation, thereby enacting a form of reciprocal teaching within the theatrical frame. The quantitative data, particularly the high ratings for receiving help from supervisors and meeting new peers, suggest that this collaborative ethos was a core driver of both literacy engagement and social connection.

The public performance created an authentic communicative purpose for repeated reading. As research on performance-based literacy interventions shows (Young & Rasinski, 2009), preparing for an audience motivates students to attend not only to accuracy but also to pacing, tone, and emotional nuance. The children's reported excitement about the performance and their voluntary practice at home reflect this intrinsic motivational boost.

By linking spoken text to movement, gesture and stage blocking, participants engaged in multimodal literacy (Rosebrock & Nix, 2020), which supports meaning-making through multiple semiotic channels. This approach is particularly beneficial for multilingual learners and those with reading difficulties, as it allows comprehension to be scaffolded through physical

and visual cues rather than relying solely on linguistic decoding.

While students' self-reports in the follow-up meeting indicated no major perceived change in reading skills, parental feedback suggested improvements in oral confidence and willingness to present publicly. This discrepancy points to the possibility that gains in expressive and performative reading may not be fully captured by traditional literacy self-assessment or standardised testing—a limitation echoed in other arts-based literacy studies.

In reading theatre, literacy development is not pursued in isolation but intertwined with social objectives. The children's sense of belonging, reinforced through shared rehearsal and performance, likely contributed to their persistence with challenging text. As Cummins (2009) argues, when literacy practices are embedded in identity-affirming, collaborative projects, learners are more likely to invest effort and take risks in their language use.

Overall, the reading theatre component of the project served as a low-stakes, high-engagement literacy practice that blended technical skill development with social cohesion. By situating reading within a communal artistic process, the project leveraged the motivational and interpretive affordances of theatre to foster group literacy in an inclusive, participatory manner.

Figure 6: Performance as reading theatre

5.4 Limitations

While the results are promising, several limitations should be acknowledged. First, the small sample size (n = 13) limits the statistical power of the quantitative findings and restricts their generalisability to other populations. Second, the absence of a control group prevents definitive attribution of the observed gains to the theatre intervention alone; improvements in cohesion and confidence could also stem from natural group bonding or other concurrent experiences. Third, much of the evidence relies on self-reporting by children and parents, which is subject to social desirability bias and may overstate positive effects. Fourth, reading outcomes were not assessed using standardised pre–post literacy tests, meaning that improvements are based on self-perception and coach observation rather than objective measurement. Fifth, the short project duration (one week) raises questions about the sustainability of the observed social and literacy benefits over time. Sixth, the results may be context-specific, influenced by the skill of the facilitators, the physical setting, and the particular mixture of participants.

Finally, potential researcher–facilitator bias must be considered, as coaches who implemented the programme also contributed observational data,

which could inadvertently emphasise positive outcomes.

5.5 Implications and Future Directions

Taken together, these findings support the conclusion that the *Stop Bullying* theatre project achieved its dual aims of fostering social cohesion and providing an inclusive, engaging context for literacy-related skill use. The triangulation of quantitative and qualitative evidence strengthens the validity of the results: numerical gains in equality, participation and comfort were mirrored in rich descriptions of supportive peer interaction, inclusive decision-making and shared pride in performance. The project's success appears to be rooted in its pedagogical approach—combining structured creative work, a socially relevant theme and meaningful public performance—which effectively engaged diverse learners in both social and literacy practices.

The most striking outcome was the dramatic improvement in perceived equality within the group, suggesting that theatre-based interventions can address initial disparities in social inclusion within a short time frame. Moreover, the high levels of enjoyment and willingness to recommend the project indicate strong acceptability, which is critical for sustaining engagement in similar initiatives.

These results align with the broader literature on applied theatre as a tool for social and educational development, demonstrating its potential to create safe spaces for self-expression, collaborative learning and social change. For future implementations, attention might be given to expanding the duration of the programme, as some children expressed a desire for more time, and to exploring targeted literacy assessments to capture potential gains in reading skills more directly. Given the observed gains in equality and confidence, replicating this approach in other settings, particularly with groups facing social exclusion or literacy challenges, is recommended.

VI. CONCLUSION

Stop Bullying—A University Theatre Project in a Summer Camp for Children to Promote Social Cohesion was designed to foster social participation by engaging children in a creative, collaborative exploration of the socially relevant issue of bullying. This study further demonstrates how social cohesion can develop within a few weeks among children who had no prior acquaintance, offering valuable insights for classroom teachers who welcome new pupils into their classes, where theatre performance may serve as a powerful catalyst for building inclusive group dynamics. In the introduction, the research question was "How can a university theatre project in a summer camp setting promote social cohesion and contribute to the prevention of bullying among children?"

This pilot study provides compelling evidence that a university-led theatre project in a summer camp setting can promote social cohesion and contribute to bullying prevention by combining inclusive theatre pedagogy with a socially relevant theme. The results demonstrate that collaborative theatrical production, integrating group reading, staging and public performance, can build a supportive group climate, strengthen peer relationships, and foster empathy, all key for reducing bullying behaviours.

Quantitative findings showed statistically significant gains in active participation, comfort and perceived equality within the group, with the most pronounced improvement in feelings of equal membership. Qualitative feedback from children, parents, and coaches confirmed these outcomes, describing increased social confidence, the formation of new friendships and the establishment of group rituals that reinforced trust and belonging. Through shared creative work and role exploration, participants engaged directly with the dynamics of bullying from multiple perspectives, allowing them to develop understanding and strategies for both empathy and intervention.

Theatre pedagogy emerged as the enabling framework for these results. Structured warm-ups, collaborative role allocation, reflective discussions and a shared performance goal ensured that all participants had meaningful opportunities to contribute. This inclusive

approach allowed children to practise cooperative decision-making, mutual respect, and emotional expression in a safe, supportive environment. By embedding anti-bullying content within a creative process, the project moved beyond awareness-raising to create lived experiences of inclusion and equality.

Although improvements in standardised reading measures were limited, the project enhanced conditions for literacy engagement, as frequent oral reading, role memorisation, and performance preparation fostered fluency, prosody, and expressive communication. The gains in social comfort and equality likely reduced barriers to reading aloud, particularly for hesitant readers. As Giera (in press) notes, by participating in multi-layered activities that combine cognitive and socio-emotional demands within an inclusive, non-stigmatising setting, students develop skills that extend beyond literacy to broader life competencies.

The limitations include the small sample size, lack of a control group, reliance on self-reported outcomes, short intervention duration and absence of standardised literacy assessment in this cycle. The findings are also context-dependent, shaped by the facilitators' expertise and group dynamics.

Despite these constraints, the triangulated evidence suggests that the *Stopp Mobbing!* model is an effective way to use theatre for promoting social cohesion and addressing bullying. It operates by creating an inclusive community through artistic collaboration, fostering empathy through embodied role-play and reinforcing these gains with structured reflection and public recognition of the group's achievements.

The implications for practice include adapting the model to diverse educational contexts, particularly those serving multilingual or socially marginalised groups and extending the intervention over a longer period to reinforce and sustain gains. Future research should track long-term social and behavioural outcomes, integrate rigorous literacy assessments and examine scalability while preserving the participatory, inclusive ethos. In doing so, arts-integrated, socially grounded approaches such as *Stopp Bullying!* can contribute meaningfully to the broader goals of educational equity, democratic participation, and social justice.

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Institutional Review Board Statement

This study was conducted in accordance with the ethical guidelines outlined by the University of Potsdam's ethics committee in accordance with the Declaration of Helsinki. Informed consent was obtained from all participants, and confidentiality was maintained throughout this study. The Ethic Commission University of Potsdam (Link: https://www.uni-potsdam.de/de/senat/kommissionen-des-senats/ek), Approval Code: 54/2021 (Name: "Stopp Mobbing! Ein Theaterprojekt", Responsibility: Prof. Dr. Winnie-Karen Giera), Approval Date: 5 October 2021.

Informed Consent Statement

Informed consent was obtained from all subjects involved in this study. Moreover, written informed consent was obtained from the patients to publish this paper.

Data Availability Statement

The data presented in this study are available on request from the corresponding author.

Conflicts of Interest

The author declares that there are no conflicts of interest regarding the publication of this paper.

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Identity, Intelligence and Relativism: Neher, Taylor and Cacciari

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INTRODUCTION

André Neher writes in his book *Ils ont refait leur âme*[1]: «Genesis and Exodus meet at the crossroads of Who? and Where?». «The problem of Jewish identity», in fact, cannot be addressed starting «from the question: "Who are you?". The Jew is related to the first question posed by God to Adam in Genesis: "Where are you?". In the Hebrew problematic, it is of the same identity as God». Instead, Pharaoh, urged by Moses for the sake of the Jews' freedom, asks: "Who is God?". As in: I do not know Him. Neher explains: «You cannot ask: "Who is God?". That would be denying it. All you can ask is: "Where is God?"».

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I. INTRODUCTION

André Neher writes in his book *Ils ont refait leur âme*[1]: «Genesis and Exodus meet at the crossroads of Who? and Where?». «The problem of Jewish identity», in fact, cannot be addressed starting «from the question: "Who are you?". The Jew is related to the first question posed by God to Adam in Genesis: "Where are you?". In the Hebrew problematic, it is of the same identity as God». Instead, Pharaoh, urged by Moses for the sake of the Jews' freedom, asks: "Who is God?". As in: I do not know Him. Neher explains: «You cannot ask: "Who is God?". That would be denying it. All you can ask is: "Where is God?"»[2].

Here, the Quebéc philosopher Charles Taylor, in his monumental work *Sources of the self. The making of the modern identity*[3], does indeed start from the question *Who am I*?, but then sees the answer primarily in my (your, his) moral location. The *Who*, that is, is translated into a *Where*: where am I, where am I? What is my *moral space*? And the "spatial co-ordinate" meets the "temporal co-ordinate": to pose the problem of the *horizon* (mine, yours, his) is to address a purpose. Right there, in the purpose, lies the sense, the meaning of my (your, his) life.

Not only that: the "original situation" of identity demands interlocutors. We are not children of nothingness, or of emptiness, but rather the expression of a context, an environment, a world. Or, if you like, of *a common, public space*. We can deviate from it; a rift can divide us from it, as often happened to the prophets or the psalmists, and to masters of thought like Socrates. Even in this, however, we need *a network of interlocution*, of forms of sharing; otherwise we risk being shipwrecked, losing ourselves in madness.

And so: where do I speak from?, and to whom do I address myself?

I would add that even the castaway, as we classically represent him or her, often feels the need to leave (and launch) a message in a bottle (a sort of letter to the world): out of metaphor, it is not infrequently the space of the psalmist, the prophet or the poet and the artist. And it is also the place of not a few of us, when we try to express our bewilderment. The same symptoms of psychopathology or the same "acts out", after all, what are they if not attempts (usually vain and clumsy) to give body and voice to suffering and the changing forms of unease?

Taylor, addressing the question of identity, proposes *the spatial metaphor*: *where am I? How do I fit in? Where is the good for me, where are the goods?* For his part, Massimo Cacciari[4] rediscovers the archaic etymological meaning—for example, Homeric—of intelligence, of *nous*, of *noein*: to go, to return (consider *nostos*, the return). Again, the spatial metaphor: where does this coming and going take place? In opening oneself up, *in moving toward the other*—so it seems to me—and *in returning to oneself*, for the purpose of self-knowledge and self-awareness: know thyself! An attempt to answer the question: *who am I?* Here is the connection with the

[1] A. Neher, *Ils ont refait leur âme*, Éditions Stock, Paris 1979; trad. it. di R. Cuomo, *Hanno ritrovato la loro anima. Percorsi di teshuvah*, Marietti, Genova-Milano 2006, my English translation.

[2] Ivi, pp. 82-83.

[3] C. Taylor, *Sources of the self. The making of the modern identity*, Harvard University Press, Cambridge MA (Usa) 1989.

[4] M. Cacciari, Conference at the Festival *Filosofia al Mare*, *Pensiero di pensiero. Aristotele e dintorni*, Francavilla al Mare (Chieti, Italy) July 12, 2025.

identity dilemma: who am I? And therefore: where am I?

Thus the metaphysical question par excellence—what is it? –, passing through the "who am I?", becomes "spatialized" and materializes in a "where am I?", which is the classic question of the wandering Jew, also referring to the divine: "Where is God? Where are you, Lord?" Not only that: the "You" easily becomes a "you": "where are you, my friend?" Which, again, corresponds to: "who are you?" Let's imagine a little girl or boy from Gaza; in their situation, the only possible question of identity is precisely the "geographical" one: "where am I?" And the most likely answer, I believe, is: "in hell."

Moreover, in Dante's Divine Comedy, moral location coincides with spatial location: or, in other words, place corresponds to each person's identity.

Let's focus again on the comings and goings: what I am is defined through comparison with the other. Hence the fundamental nature of moving toward him/her: a sort of hand-to-hand combat with otherness, without which identity would not emerge. I can truly know myself by struggling with/against the other. *Where*, however, *does my singularity* lie? This is the moment of "returning" to myself, through which I gain awareness of my *difference* and *uniqueness*. Awareness, Cacciari emphasizes, is the basis of *my* will, different from yours, and therefore of my *autonomy* and, ultimately, of everyone's *freedom*.

In all fairness, will and freedom emerge from the coming and going, from *the tension* between the two moments: it is not a sort of first stage (the opening to the other) and second stage (the return to oneself), but rather *two simultaneous movements*. At the same time, I move toward the other and return to myself. At times the first movement may prevail, at times the other, but they are conceivable, in their complementarity, only together. To convince ourselves of this, it would be enough to ask ourselves: where do I start to approach the other? And, conversely: where do I move to reach myself?

Returning to Taylor, then, it is my positioning with respect to the good that defines my identity. But it is not a static positioning; rather, it is *an orientation*. It is *the direction* one gives to one's life, or, if you will, *its meaning*. And orientation in turn refers to a movement, to *a ceaseless search*. Thus the motif of coming and going, of shifting, of movement, toward the other and toward oneself returns. Not only that—and here the centrality of the other in my life reasserts itself with all its force—but the idea of the good and of the goods toward which one moves is profoundly tied to the historical and social context; it is not a "private" idea, but a shared one. The awareness of my singularity is nourished by *a shared network* of reference points, without which I would risk getting lost and shipwrecked, even if I didn't entirely coincide with it.

"In reference to," "relative to": to paraphrase Aristotle, we could say that *relativism can be expressed in many ways*.

Cardinal Carlo Maria Martini's speech on Christian relativism remains memorable: the Lord is absolute, not our attempts to understand and follow Him.

From a philosophical perspective, the monumental work of Quebec thinker Taylor[5], among others, sheds light on the *vexata quaestio* of relativisms (in fact, I consider it far more appropriate to discuss them in the plural). There's no text that directly addresses the topic, then. Let's try to understand better.

On the one hand, our era is characterized by widespread *subjectivism*: every choice, including moral stances, seems to be entrusted to each individual's tastes, sympathies, and "experience." Not only that: from this perspective, one can abstain from taking a stand on what is good and what is bad, almost as if it were an optional extra. Be careful: this isn't the suspension of judgment, but rather its avoidance.

On the other hand, there is a rather widespread understanding of *relativism* according to which

[5] C. Taylor, *Sources of the self. The making of the modern identity*, cited.

there is a fundamental *incommensurability* between dissimilar situations, contexts, and cultures. No rational comparison between them is possible. With the risk that, at the same time, everything has value and deserves respect, while nothing has and deserves it. As if to say: A equals B. With the inevitable outcome of a sort of indifference to things: in-difference in the etymological sense; nothing would make a difference, precisely in the name, paradoxical as it may seem, of equal respect for all differences.

And then—in this regard, Taylor's lesson is extraordinarily powerful—there is the level of absolute explanations, those followed in the natural, "objective" sciences, distinct from the level of *explanations that take into account the meaning, the sense things have for us*, and do not ignore it. Or, if you prefer, explanations that refer, are relative (hence the root of the word "relativism") to the meanings for us, to the meaning things take on.

And, for our author, it is here, and only here, that moral philosophy can be situated, an ethics not unconnected to the question of what goods are, with the changes and conflicts that characterize them.

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Language as a Sign System: Redefining the Linguistic Sign

Eric Papazian

ABSTRACT

The article discusses the linguistic sign and proposes a redefinition of the sign concept in both structuralism and cognitive linguistics. It is based on a usage-based view of language and is general, including all communication systems, also written and gestural languages as well as minor systems like the traffic lights. Content, expression and signs as wholes are discussed separately and the linguistic sign is compared to "semiotic" signs. The central claims are: 1) Reference is primarily mental and linguistic, and the basis of meaning. 2) A mentalistic definition of signs is incompatible with a usage-based view. The expression is physical, in language as in usage. 3) Neither arbitrariness nor linearity and duality are necessary qualities of signs in general. Signs may be motivated, simultaneous and lack duality. 4) Spoken, written and gestural languages are sign systems of their own, not manifestations of an abstract language with no particular expression. 5) Only minimal signs (morphemes) consist of expression and content. Complex signs consist of (smaller) signs. 6) The linguistic sign is a category of its own, not a subtype of "semiotic" signs. Only the linguistic sign expresses ideas and is relevant for communication.

Keywords: sign, content, expression, arbitrariness, linearity, duality, semiotics, icon, index, symbol.

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Keywords: sign, content, expression, arbitrariness, linearity, duality, semiotics, icon, index, symbol.

I. INTRODUCTION

1.1 A Unilateral or a Bilateral Sign?

The subject here is the *linguistic* sign as introduced by Saussure: a *bilateral* unit consisting of an *expression* and a *content*. However, there are also other concepts called «sign», such as the senses of the word in everyday speech, e.g. in expressions like *a sign of weakness or disease*. Here *sign* denotes a *non-linguistic* phenomenon (e.g. stumbling) which is an *index* of or *indicates* something else (such as weakness or disease). *This* sign is *unilateral* and corresponds to the *expression* in the bilateral sign.

A wide, unilateral sign concept which comprises such indices as well as icons (representations of something) and symbols like the cross or the flag is also used in *semiotics* (semiology), e.g. by the American philosopher Peirce (see e.g. Deledalle 1978, 121 or Johansen 1993, part II) and in the book *The Meaning of Meaning* by Ogden & Richards from 1923 (here cited from the 8th edition, Ogden et al. 1946). For "...those signs which men use to communicate one with another and as instruments of thought" (Ogden et al. 1946, 23), i.e. *linguistic* signs, the word *symbol* is used, by both Peirce and Ogden et al. But symbols – also called *words*, the prototype of a linguistic sign – do not *include* meaning, as we can see from the well-known triangle in Ogden et al. (1946, 11) of the three factors *symbol*, *thought/reference* and *referent*. Thus it does not correspond to Saussure's linguistic sign. Also Saussure suggests such a broader sign concept in the subsection about semiology (1967, 32 f) without defining it, with examples like rituals, dress fashions and writing, and regards the linguistic sign as a subtype of «semiological» signs.

My own view is that it's misleading to equate dress fashions and writing (as in this article). Writing consists of linguistic signs, e.g. words and sentences with a precise meaning, and a unilateral sign cannot explain communication. How can we understand *words* if they are nothing more than expressions, e.g. sounds or letters? We must also know their *meaning*, which presupposes that they have a meaning, described in *dictionaries*. Sørensen (1963, 13) thinks that «in practice the

two views are completely identical», because also the unilateral sign accepts that the sign must be «meaning-bearing». But they are not. The «meaning» of a unilateral sign can be *anything*, including physical objects, whereas the expression of the bilateral sign is connected to *ideas* – meaning proper – making certain ideas *part of language*, not something external. Therefore, bilateral signs are used for *communication*, exchange of ideas, while the unilateral signs normally are not. To communicate precisely, we need ideas, not objects.

According to Ogden et al. (1946, 9–10), words have meaning only in *usage*: "Words, as every one now knows, 'mean' nothing by themselves [...]. It is only when a thinker makes use of them that they stand for anything or, in a sense, have 'meaning'." Words are just *instruments*. Croft (2000, 111) makes the same point: «...linguistic expressions do not contain meanings. Meaning is something that occurs in the interlocutors' heads at the point of language use (speaker's meaning)...». This could be called «usage fundamentalism»: One sees only the *use* of language, where words are just *expressions* produced by the sender (like the letters on this page). Still, the receivers *understand* them if they *know* the words from before. Not only must words have a meaning; the meaning must be *known* by both parties in communication. Using an instrument presupposes that the instrument *exists*, independently of use. The point of a word or a language is to exist, ready for use when needed, words with meanings, and in usage we choose words with the meaning that we want to express. If we want to talk about cats in English, we have to use the word *cat*. People usually agree about what expressions mean – which is why they usually understand each other – and even when they disagree, they agree that they mean *something*. «Meanings are what makes sounds or sound sequences *linguistic*...» (Sørensen 1963, 15).

According to Croft (2000, 111) «...thoughts or feelings cannot 'go' anywhere outside the minds of humans», e.g. into words, so words cannot *contain* meanings. Well, words cannot contain meanings in any *literal* sense, because ideas are not a substance one can contain. But certain ideas can be *connected* to certain expressions by *convention* or *custom* (see Lewis 1974 or Croft 2000, 95 f), a usually tacit *agreement* in practice in a group of people that communicate regularly – a *speech community* – that such expression has such meaning, e.g. that the letter sequence CAT in English-speaking communities is connected to the idea of cats. Where does meaning *come from* when a sign is used? The answer must be that it comes from the *expression* plus knowledge of what the expression means in the actual language. In *this* text meaning comes from *written characters* – primarily letters – and the conventions of English writing that connect them to certain meanings and hopefully are known by the readers.

So expressions do have meanings by themselves, and we have to do with a *complex* unit. As every dictionary takes for granted, words have constant conventional meanings – usually several – and they are used rightly when they are used with these meanings. Croft (2000, 105) himself mentions «signal meaning», the meaning that is *generally and conventionally* connected to the expression, independently of individual speakers, which is *part* of the word, described in dictionaries. Otherwise linguistic communication would be inexplicable. So let's turn to the bilateral or linguistic sign.

1.2 Historical Background

The bilateral sign has roots in antiquity, especially the stoics, and was also known in Middle Ages linguistics (see Jakobson 1971, 345; Malmberg 1973, 42: Eco 1984, 29 f; Gullichsen 1990, 65 f). The greek terms *semeion, semainon* og *semainómenon* were translated into latin as *signum, signans* and *signatum* or *significatum*, which Saussure translated into French as *signe, signifiant* and *signifié*, i.e. sign, expression and content (meaning). Another embarrassing ambiguity of *sign* is that it is used not only of both non-linguistic (unilateral) and linguistic (bilateral) signs, but also more specifically of the signs of «sign languages», i.e. a specific *kind* of linguistic signs. Compare the title of Stokoe & Marschark (1999): «Signs, gestures and signs».

This is obviously not a good terminology. *All* types of language consist of signs. Therefore I call such signs «gestures» or «gestural signs» and the languages «gestural languages», and reserve *sign* for the general concept.[1]

According to Koerner (1972, 11) the linguistic sign is the most debated of all of Saussure's concepts. The reason must be that it provides a basis for a general definition of languages as *sign systems*, explaining both what language *is* and how it is *used* in linguistic communication, i.e. communication by bilateral signs. If so, the sign ought to be the fundamental concept in any linguistic theory. However, that is not the case: "Most post-Saussurian linguists have not adopted the sign as their theoretical and methodological unit of analysis…" (Tobin 1990, 15). This is primarily the case in *American* linguistics – neither structuralists nor generativists have used the concept. Garvin (1954, 76) calls the linguistic sign «a fundamentally different conception from that of a number of American linguists», and Martinet (1976, 66) says that Saussure's sign «…has mostly never been understood by, and is explicitly rejected by, certain Americans». An example is Chomsky (1986, 19), who describes Saussure's «langue» as «…a system of sounds and an associated system of concepts» instead of a system of signs. And he rejects the whole concept as a «platonic» conception, belonging to the world of ideas only. However, today Saussure's sign has at last been accepted also in USA, with cognitive grammar where the sign is a basic concept, under the term *symbol*, however. Langacker (1991a, 537) calls "the reduction of grammar to symbolic relationships between semantic and phonological structures" for "the central feature of cognitive grammar", and says that "Such a model directly and straightforwardly manifests the basic semiological function of language".

Also Ogden et al. (1946, 5, note 2) reject Saussure's sign because «…the process of interpretation is included by definition in the sign» (by regarding the content as part of the sign) and because it does not consider «…the things for which signs stand», i.e. the *referent* (1946, 6). The last statement is true, and this could be considered as a serious flaw in Saussure's sign theory. Therefore, I will include a discussion of reference and its relation to content and meaning.

1.3 Plan of the Article

I take Saussure's and Langacker's definition of the sign/symbol as a point of departure (Section 2.1), discuss some problematic aspects and propose several revisions, treating content (2.2), expression (2.3) and signs as wholes (2.4) separately.

In the section about the content, both reference and meaning are discussed. As to the expression, one major problem is that both Saussure's and Langacker's sign concepts are *mentalistic*, supposing the expression – and the sign as a whole – to be mental. I propose a *non-mentalistic* sign that is compatible with a functionalistic, usage-based view of language. I will show that this view implies that signs and languages include *physical* entities and therefore cannot be entirely mental. Instead, they but must be *social* – *institutions* or systems of *conventions* (2.3.1), as especially Saussure has underlined. Another major problem with Saussure's definition of the expression is that it is *too narrow*, limited to *spoken* language. We have linguistic signs with expression and content in *all* communication systems, also *written* and *gestural* languages, and even in minor or delimited communication systems like the traffic lights. Therefore, I propose a *general* linguistic sign that can explain *all* communication by signs, with whatever expression (2.3.2). Arbitrariness, linearity and double articulation have been proposed as defining qualities of signs and language. They all concern the expression and are discussed under that heading (2.3.3-2.3.5). I will show that none of them are valid for *all* signs.

As to signs as wholes, I distinguish between *open* and *closed* signs systems (2.4.1) and discuss if signs with different expression, e.g. speech and

[1] Gestures should be distinguished from *gesticulation*, which may accompany speech (and perhaps also gestures). Gesticulation has neither a definite expression nor a definite content and does not constitute signs, but is something speakers may do for expressivity, especially in some cultures.

writing, can be seen as different realisations of the *same* sign system with no *specific* expression (2.4.2), if signs exist *between* expression and content (2.4.3), and *complex* signs, i.e. grammar (2.4.4). Finally, I take up the relation between *linguistic* and *semiotic* signs (2.4.5).

II. THE LINGUISTIC SIGN

2.1 Saussure and Langacker

Saussure (1967, 97 f) defines a sign («signe») as a connection of an *expression* («signifiant») and a *content* («signifié»), namely a *sound image* (*image acoustique*) and a *concept* (also called *sens* and *idée*). Both are *mental* and «connected in our brain through association» (my translation, here and in other citations in other languages than English). The sign is the basic unit of language, and language is a *sign system* (1967, 33). Compare Saussure (2002, 20): «A language exists if an idea is attached to *m* + *e* + *r*» (meaning the sounds). And for one who knows French an idea *is* attached to the sound or letter sequence *mer*, namely 'ocean' (in speech also 'mother' and 'mayor'). As Hjelmslev (1973, 126) points out: "For purely logical reasons it seems obvious that any conceivable language involves two things: an expression and something expressed. [...] These two things taken together are fundamental to all languages". So we have three entities: the *sign*, usually marked by italics for written signs, e.g. the word and morpheme *cat* in English writing, the *expression*, here marked by capitals for writing (CAT) and the *content*, marked by single quotes ('cat').

Making meaning part of the sign makes certain meanings or ideas *part of language*: As Saussure (1967, 97) points out, languages comprise *concepts*, and learning a language includes learning the concepts of the language. Some languages include ideas like the devil and werewolves, others do not. That's why also the concepts of languages may differ and exact translation becomes difficult. But Saussure underlines (1967, 32, 98, 99) that also the *expression* is mental: The sound image is not the sound itself, but «the mental imprint of it» (p. 98).[2] Consequently, Saussure's sign is *mentalistic*: Expression and content are connected through *association*, not by *convention*, and the sign is mental as a whole (in other contexts, Saussure underlines conventions). Secondly it exists only in *spoken* language, which Saussure (1967, 45) like many other structuralists considers as the only form of language: The expression is images of *sounds*.

Also for Langacker the expression is mental and phonic, i.e. sound images. Signs (usually called *symbols*) are said (1987, 11) to consist of a semantic and a phonological «representation". And Langacker states (1987, 78–79) that "...sounds (at least for many linguistic purposes) are really concepts", so that "phonological space should [...] be regarded as a subregion of semantic space". But in Langacker (2013, 15) the «phonological representation» is said to include *gestures* and *written characters*. Langacker's sign is therefore broader than Saussure's, and includes also written and gestural signs.

Why do we have signs? Neither Saussure nor Langacker says explicitly what signs are *for* or what is the *function* of a sign (system). Maybe because the answer is obvious: to *express* ideas to others, i.e. *communicate* one's thoughts. Signs and languages are *instruments* or *means*, something one may *use* for a certain *purpose*, which must be what we normally use them for, namely communication.[3] As thoughts cannot be communicated directly because they are unobservable, they must be connected to something that *is* observable, e.g written characters (as in this text). That's why signs must have both a content and an expression. And when we know the sign, i.e. which content is connected to which expression, e.g. what CAT means in English, we can use this knowledge to use the sign

[2] But he often forgets himself and describes (e.g. 1967, 110, 111) the expression simply as *sounds* (*sons, matière phonique*).

[3] This does not preclude *secondary* uses. When we speak to ourselves or swear, we don't communicate, but concentrate or give vent to feelings. We can also *think* in language, e.g. in «imaginary conversations», and also have to think linguistically when we *plan utterances*. Written language is indispensable as a *memory support*, as when preparing a speech, taking notes from lectures or making shopping lists.

both as a *sender* to express our thoughts about cats by producing the expression, and as a *receiver* to understand what other people mean when they produce the expression.

2.2 The Content

2.2.1 Content, Meaning and Reference

- *Content consists of reference and meaning*

The content is described by Saussure as a *concept*, i.e. a *general* conception of a specific *type* (class) of objects, actions etc., like 'horse', 'city' or 'planet'. Langacker uses the term «semantic representation», which is broader than «concept». In most words, like *horse, city* or *planet*, the content can be said to be a concept, and this is what is usually called *meaning* and described in dictionaries. But there are words like *Sleipner* (Odin's horse), *Oslo* and *Venus*, which denote an *individual* horse, city and planet. Also such words *denote* or *refer to* something and are signs with a content, although a highly specific one – the conception of specific individuals – and also these ideas belong to the language and may lack in languages that lack these words. It is first and foremost *proper* nouns that denote individuals. But also noun phrases like *my horse* or *that horse*, which are complex signs, denote individuals and not general concepts. So the content should be described as a *conception*, a *mental representation* or simply an *idea*, whether of individuals or a class.

Since proper nouns denote individuals, they need not have, and usually don't have, any *descriptive* or *classifying* meaning (like the examples above), and usually don't figure in dictionaries (but in encyclopaedias). Nor can they be *translated* to other languages. As Teleman et al. (1999, 116) point out, typical proper names don't have any meaning.[4] Both *planet* and *Venus* can be used to refer to Venus, but *planet* in addition *describes* or *classifies* Venus as a planet, with the *qualities* that define the class (such as circling a star). So it has both a classifying *meaning* ('planet') and a *reference* (Venus and 'Venus', the idea of Venus), and can be *translated* to synonymous words in other languages. *Venus* just *refers* to the planet without classifying it, and therefore is not translatable. Reference is *the only content* of such words, while most words have meaning in addition. So we must distinguish between *reference* and *meaning* as two parts of the content. Let's take a closer look at these two content factors.

2.2.2 Reference

- *Reference is primarily mental and linguistic, and the basis of meaning*

Most signs *refer* to something, mainly phenomena in the world, e.g. objects – the *referents*, including languages or parts of them, from sounds to sentences. So a word can refer to itself, so-called «meta-language». This is a basic function of signs, which enables us to talk of the world we live in, and the reason why reference is usually regarded as non-linguistic. Reference can be both *possible* or *potential* (in the language) and *actual* (in usage). Kleiber (1981, 13) says that referring presupposes that the signs used have an immanent or possible reference, and distinguishes (1981, 19) between «virtual» and «actual» reference, often called respectively *denotation* and *reference* or *extension* (see Lyons 1977, 177 f). *Venus* can refer to a *Roman godess* as well as a *planet* and thus has two possible referents, but in usage one of them is intended. The possible reference of *I* is the class of senders, the actual reference is the sender of the actual text. Words like *teacher* or *student* can denote persons of both sexes, but in usage they will refer to either a man or a woman (if one is not speaking generally), and one has to use different pronouns.

However, not *all* words refer. Content can also be purely *relational or functional*, especially in *grammatical* words like *and, or, if* or formal subjects. Sørensen (1963, 14) points out that words like *the, a, this, very* do not denote independently of other words because there are no such things. They still have meaning. In *It's raining*, *it* has neither reference nor meaning, but just a *grammatical function* – to fill the subject position, which must be filled in English

[4] Some proper names consist of common nouns or NPs and thereby have meaning. Venus is also called *The evening star*, which describes the planet as a star, and names like *Oxford* are transparent to a speaker of English.

sentences. Also *syntactic functions* like modifier and head or subject and object, e.g. the semantic difference between *I* and *me*, must be regarded as functional meanings. They are definitely part of sentence meanings.

According to Lyons (1977, 209), both potential and actual reference depend on "the axiom of existence: whatever is denoted by a lexeme must exist". Also Sørensen (1963, 14) says that words like *centaur* do not denote. But e.g. Peter does not have to exist for us to refer to him – he might be imaginary as well. Words like *Tarzan* or *werewolf* don't have any *physical* referent, but still can be used for referring to these fictional objects and making statements about them. When Tarzan speaks, *I* refers to Tarzan, who is just an idea. Kleiber (1981, 138) underlines that reference is not limited to the physical world. As Algeo (1973, 44) puts it: «For the linguist, *Xanadu* has as good a referent as *Canada*». The names refer to two places, and whether both, one or none of them exist in the physical world, is irrelevant (and unknown to many). They both exist in our *minds* – if we know these words. We disagree on whether *God* refers to something «real» or non-linguistic or not, but that is not a *linguistic* problem. The word can be used by anyone who knows its *content*, whether a believer or not. All you need is an *idea* you can refer to, whether it corresponds to a non-linguistic entity or not.

In cases like *Tarzan* or *werewolf*, the referent is obviously *mental and linguistic*, a part of language. But what about *Venus or cat*, which refer to things in the world? Well, there is a mental referent for these words too, namely the *idea* of Venus and cats. According to Kleiber (1981, 15), referring presupposes a mental referent («un référent conceptuel»). Hudson & Langendonck (1991, 331) underline that "The referent of a word is a concept, and *not* an object in the world, contrary to the standard use of this term", and Langendonck (2007, 21) points out that "...extensions and referents are in the first place of a mental nature. For linguistic purposes it is of secondary importance whether any real world entities are designated or not". Also Dik (1997, 129) says that the «entities» we refer to, «...are not 'things in reality', but 'things in the mind'.»

Referring to or talking about things in the physical, so-called «real» world – the mental world is just as real – is a central use of language, perhaps the most central. But we have to do so *indirectly*, through of our *conceptions* of those things. Fitch (2010: 122) points out that «...concepts occupy an irreducible intervening role between language and external meaning in the real world», and Dik (1997, 129) that «...we can refer to 'real' things only to the extent that we have some mental representation of them». That's why we can't speak of things we don't know; e.g., we couldn't refer to black holes before we discovered them. So some linguistic concepts correspond to something in the non-linguistic world and some do not. The difference is essential in the natural sciences, but not in linguistics. Fortunately, we can also conceive of and refer to things that *don't* exist in the non-linguistic world, as in superstition, fairy-tales, novels and science fiction. Which is a prerequisite for *changing* the world by imagining and creating novel things.

So reference is primarily a *semantic* concept, which is why it usually is treated in semantics. And we must distinguish between *mental* referents – the *ideas* connected to a sign, e.g. the idea of Venus or Tarzan, and *physical* referents, the non-linguistic *objects* of the ideas, e.g. the planet Venus, which words like *Tarzan* lack. And these mental referents or ideas are *collective* and belong to the language: All Norwegians have heard of trolls, Peer Gynt and Terje Vigen, objects that exist only in the mental and linguistic worlds, in fairy-tales, dramas and poems. And such ideas, e.g. in religions or political ideologies, can have profound effects in society, so they are definitely a part of «reality».

The possible reference of *planet* is the class of celestial bodies that it can be used rightly of, the actual reference when used is particular bodies of the class (or the whole class). But *planet* also has a *meaning* which *describes* the referent and *delimits* the potential reference: If we know the meaning, we know which bodies belong to the class and can be called planets. In other words,

meaning *determines* the potential reference (Sørensen 1958, 50), and synonymous words (like *bull* and *ox*) have the same reference (Sørensen 1963, 16). For *Venus* there is no description and no class and we have to *know* which individual(s) the word refers to or is the name of. On the other hand, the potential reference is the *basis of meaning* (Haiman 1980, 336). Words that have two potential classes of referents, like *man* in English, also have two potential meanings: 'human' and 'male human', one of which is actualised in usage. Therefore, we can use a physical referent to illustrate the meaning of a word, e.g. point to a cat and say «That is (called) a cat». And dictionaries can describe the meaning of words by delimiting the potential reference, sometimes by technical terms unknown to most speakers, e.g. *chimpanzee* explained as *Pan troglodytes* – a kind of shortcut to save space.

2.2.3 Meaning

- *Meaning is common knowledge of the referent*

The meaning of a word is an abstraction from the potential referents – a simplified mental image of the actual class where only *essential common qualities* are relevant, for *man* sex and age, for *planet* circling a star (and a certain mass), but not size or composition. So meaning must be our *knowledge* of the referent, whether it exists in the world (like horses) or just in our imagination (like centaurs). And these meanings are *collective* and known by (almost) everybody because they are connected to an expression which is *used in the same way* and with *the same meaning* by the members of the actual community. This means that they exist in *society*, not in the users' heads – like the rest of language. In English, *beech* and *elm* have different meanings (and potential referents), although many people don't know the difference. But *some* people do and therefore society and language distinguish them.

So we have to express our individual thoughts through collective linguistic categories, including thought categories or meanings. As Linell (1982, 222) points out, we must distinguish between the *general* or *conventional* meaning in *language* (Croft's *signal meaning*), which is independent of situation and context and the *actual* or *communicated* meaning in *usage* (Croft's *speaker's meaning*), what the speaker *intends to express*, which is not (we also have *receiver's* meaning, how the receiver *understands* the sign). This is the basis for the distinction semantics/ pragmatics. When signs are used, the speaker's thoughts, often more *specific* than the general meaning(s) of the sign, are conveyed by the fixed linguistic meaning, with a little help from (especially the previous) context and situation (e.g. who's speaking). In language, as a *type*, the pronoun *I* denotes the sender *in general*, as a *class*; in usage, as a *token*, it denotes a *particular* sender, the one who utters it. The general concept 'sender' (speaker, writer, signer) is part of English because it has an expression (normally *I*), the conception of particular senders is not. Here, *meaning* usually refers to the *general* meaning.

This meaning cannot be *individual* knowledge of the referents, which *varies* while the meaning has to be *constant* to function in communication: Some people (e.g. astronomers) know a lot about planets while others know next to nothing, but *planet* means the same to both, if they know the word. So experts and laymen can talk about planets, e.g. as teacher and student. Nor can (general) meaning be identical to *collective* («encyclopaedic») knowledge or science: Encyclopaedias describe what is known of *the referents*, not the collective *conception* of the referents in the actual language and community. That's why they usually come in several volumes. Fortunately, we don't have to know the chemical composition (and even less the formula) of salt to understand the word *salt*, just what it *looks like, tastes* and is *used for* and it did not change meaning when the chemical composition was discovered. If meaning were encyclopaedic, so that the meaning of *planet* were all that is collectively known of planets, dictionaries would be impossible.

Besides, linguistic knowledge (competence) must be based on individual knowledge, not science. Even if individual knowledge varies, some of it is *common knowledge* – what everybody or at least most people know of the referent, especially the things that surround us and we experience every

day. Even that planets orbit a star and that the earth is a planet, is probably common knowledge in most societies today. If you know this, you know the meaning of *planet*, what the possible referents have in common.

2.3 The Expression

2.3.1 Is the Expression Mental or Physical ?

- *The expression must be physical to function in communication*

According to both Saussure and Langacker the expression is *mental*, respectively a «sound image» and a «phonological representation», which must be the same thing. This means that signs and languages are mental *as a whole* and exist only in the *minds of the users* as individual *knowledge* or *competence*, and that languages are reduced to *idiolects* or *individual* systems: «The only scientifically genuine entities are individual grammars situated in the heads of individual speakers» (Pinker and Bloom 1990, 721). This «mentalistic» view of language is the usual view in both generative and cognitive grammar, but is also found in Saussure's description of the sign.

But how can a mental expression, e.g. a sound image, *express* something and be used to communicate? A sound image cannot explain *communication*, because nobody can *hear* it. An expression must be *physical and observable* to communicate and be learned. Atkinson et al. (1991, 59) rightly point out that "…if language is to have public status it must be encoded in a medium accessible to the senses". If so, signs cannot be entirely mental objects, even if a part of them – the content – is, but must be *social* or *conventional*. Saussure is better known for this alternative view: that signs are «social by nature» (1967, p. 34) and that language («langue») is conventional and collective (p. 34, 108), «outside the individual» (p. 31), «exists fully only in the collectivity» (p. 30), and presupposes «a speaking group» (p. 112). Namely a system of *conventions* (p. 25) or an *institution* (p. 33). Also cognitive grammar accepts that language is conventional – «a structured inventory of conventional linguistic units" (Langacker 2013, 222).

Of course one also needs a mental representation of these units in order to use them. Like other conventions, signs must be *known* and *learned*: To follow a convention one has to know it and be *competent* in using it, which may require *practice*, e.g. in producing the sound types of the language. But a mental representation is *individual*, not conventional. What exists in the mind must be individual ideas, since there are only individual minds. Conventional implies *collective* – one cannot make an agreement with oneself. Harder (2010, 294) points out that «…social entities depend on individual minds without being reducible to them». For something to be collective, it must also exist *outside the mind*, as an *agreement in practice* between a group of people, realized by *the same behaviour*, e.g. calling a cat a CAT: «…there must, of course, be agreement between producers and receivers if people are to understand each other» (Corballis 2002, 112). So Saussure contradicts himself by saying that signs are wholly mental.

Knowledge of signs must be *common knowledge*, known by all or at least many in the community to function in communication. Individual signs, i.e. signs that are known by only one, would be useless, because nobody else would understand them. But in large communities no individual knowledge equals the whole language, especially the words. A dictionary lists all words that are in regular use in a language community and can contain hundreds of thousands of words, but each person knows and uses only a part of these words. So *conventional* or *collective* does not mean that all signs are known by *every member* of the collective, only by most of them. Children start life without any linguistic knowledge, and many words, e.g. technical words like *modifier* or *fricative*, are known by only a section of society. Each user's knowledge usually *differs* somewhat from others', but not more than that they can communicate. Even *collective* knowledge, i.e. science, like a dictionary, is partial: We don't know all about language, not even all words that are used in a speech community.

As agreements between people who communicate regularly, signs are cultural *products* – probably one of our very first – in language *communities*

(Armstrong et al. 1995, 147) that may consist of millions of individuals. That's why there are only about 6 000 «languages» on Earth, not 8 billion. This makes linguistics a *cultural* science, usually placed in the Humanities faculty – not a cognitive or psychological one, and still less a natural science, as Generative Grammar claims (Åfarli 2000, 138–139). And that's why signs usually *differ* between language communities, a matter of historical accident. For the meaning 'ox' the English happened to agree on the expression *ox* (or *bull*), the French on *bœuf*, and both function equally well as long as there is agreement on the matter in each community. And the convention is an *objective* fact which is independent of what individuals *think*: You may dislike it, but you can't do anything about it. You may even be *wrong* about it and think that *ox* means 'cow', but that does not change the meaning of the word. Signs are *common* property, not private. Nobody decides over language, because everybody depends on the cooperation of others – unless you are a dictator and can force people to comply.

- *A mental expression is incompatible with a usage-based view of language*

Cognitive grammar is *usage-based*, which means that it regards usage, the regular or conventional use of language, as basic and of *the same kind* as language: «…structure […] is not independent of usage or radically different in nature. Rather, structure emerges from usage, is immanent in usage, and is influenced by usage on an ongoing basis" (Langacker 2010, 109). Language and usage are closely connected and *influence* one another: «Usage feeds into the creation of grammar just as much as grammar determines the shape of usage» (Bybee 2006, 730). Saussure (1967, 37) says the same thing when he says that language («langue») and usage («parole») *presuppose* each other and calls language both the *instrument* in and the *product* of usage.

According to Bybee (2006, 711), «A usage-based view takes grammar to be *the cognitive organization* of one's experience with language», and according to Croft (2000, 109) grammar is «…an individual's *knowledge* of the conventions of the speech community» (my emphasis in both quotes). But individual knowledge *varies* and can be both *incomplete* and *wrong* (e.g. in children), resulting in faulty usage, and there is no «perfect competence». If we don't all have the same knowledge of language, whose is the right one? A usage-based view of grammar should take grammar to be the (grammatical) *conventions* themselves, i.e. *the linguistic categories that are used* in the actual speech community: the *units* (e.g. the words) and the (e.g. syntactic) *rules* that occur in usage as general *types* (classes) instead of individual *tokens*. E.g. that the many occurrences of the word *the* in English usage count as one in the English language, including its two expressions in speech.

Kemmer & Barlow (2000, VIII) think that a usage-based theory is compatible with a view of language both as «…structures derived by the analyst from observation of linguistic data…» (the «external» linguistic system) and as «…structures posited by the analyst as a claim about mental structure and operation» (the «internal» linguistic system). But what occurs in usage, is *physical* units or actions like sounds, written characters or gestures. This is what we hear or see and recognise as expressions of signs (e.g. words) that we know, associated with a content. And if the expression is physical (sounds, letters etc.) in usage, but mental (sound images etc.) in language, language and usage would be «radically different in nature», and language could not be «the product of usage» – which it clearly is, as we can see from language *change*: «Nothing comes into language without having been tried in usage» (Saussure 1967, 231). So if we take the usage-based claim seriously, these physical entities should also be recognised in the *language* that is used, as general types that can be used by various speakers on various occasions. Usage consists of individual tokens or uses of the types in the language, else it is ungrammatical.

Therefore, it is natural that cognitive linguists now lay more stress on the social aspect of language, which Harder (2009, 15) regards as «…one of the most promising developments in current cognitive linguistics». Croft (2009, 395) criticises cognitive grammar for being too «solipsistic» and «inside the head» and argues for «a social cognitive linguistics» (p. 412). Geeraerts

(2016, 527) calls language «an intersubjective [...] tool» and thinks that «the social turn» in cognitive linguistics follows naturally from other features of the theory. Rather, it follows necessarily from the feature «usage-based», for if language is «immanent in usage» and «...not independent of usage or radically different in nature», a consistent usage-based view cannot escape the conclusion that language is something external, namely conventions manifested in usage as grammatical utterances – utterances that follow the conventions.

Usage thus shows what the actual language *consists* of, the *units* of the language, from sound types to sentence types. Speech, for example, shows that a spoken language includes a *sound system* consisting of certain *sound types*, as it is usually described in phonology. And they are certainly not mental objects. It is not the *representation* of the famous «thick /l/» in Norwegian and Swedish that is part of these languages, but the *sound type* (an apico-postalveolar flap) itself. That's why phonetics is usually not regarded as part of linguistics. The speakers of course need a mental «image» of the sound – how it sounds and is made – before they can pronounce it, built from previous encounters with the sound. But a sound image and what it is an image of, i.e. a sound type or the sign expressions that include it (words with «thick /l/»), are quite different things, respectively *knowledge* and the *object* of knowledge: parts of language. As Jackendoff (2002, 298, note 4) points out, the expression *knowledge of language* implies «an external entity, 'language', that is known». A representation presupposes *something represented* and knowledge presupposes *something known*. The mentalist view of language confuses these two objects, one social and collective (language) and one mental and individual (knowledge of language).

A language consists of the linguistic units that are used *regularly* by various persons – once or twice does not make a convention. That's why we can *learn* language from usage and *reconstruct* a language from texts.[5] As Kemmer og Barlow (2000, IX) point out, units that don't occur in usage, simply don't exist. Compare Langacker's (1987, 53–54) «content requirement»: that the only linguistic units are «phonological, semantic, and symbolic structures that actually occur in linguistic expressions». As Langacker (1991 b, 289–290) points out, this excludes «arbitrary descriptive devices» that lack expression and content. It also means that grammatical utterances, i.e. those that follow the conventions of the language and are accepted by the users as «right», are the decisive *data* of linguistics: «Any sound linguistic theory must be based on concrete utterances of speech» (Vachek 1989, 2). This makes linguistics an *empirical* science with an observable basis that can falsify any theory.

A usage-based linguistics, then, must define expression as *physical*, which makes the sign as a whole a *psycho-physical* entity. A general definition of a sign must be a conventional combination of *ideas* and *physical objects* – sounds, letters, lights etc. – or *actions*, e.g. gestures, which are known and used in communication by a group of people. According to Shaumyan (1987, XI), language has «a unique ontological status». It is neither mental nor physical, but belongs to «a special world, [...] the world of signs systems». But the world of signs is not a world of its own, just a *combination* of two well-known worlds, the mental and the physical, so it is *both* mental *and* physical. The whole point of a sign must be to connect something mental (ideas), which cannot be observed, to something physical, which *can* be observed. Then we get a combination of an expression and a content, which presuppose each other and always occur together, so that the speakers associate them and one of them calls forth the idea of the other. This allows us to «hear» or «see» an idea, a statement and even a whole story or (in writing) a linguistic treatise. *That* is the wonder of language, a cultural

[5] We must distinguish not only between *language* and *usage*, the conventional use of language, but also between usage, the *actions* of the communicators, and the *product* of the sender's action, *texts* and *utterances* – sounds in speech, letters and other characters in writing. Usage is transient, texts can be lasting, especially if they are carved in stone or recorded.

edifice far greater than the pyramids, refined by countless persons over millions of years.

2.3.2 A Phonic Expression or any Expression?

- *Signs can have any expression, and there are many types of sign systems*

Saussure's definition of the expression as a *sound* image implies that signs exist only in *spoken* language. This Saussure elaborates in the chapter «The representation of language in writing»: Writing is not language, but just *represents* or *renders* (spoken) language like a photograph renders a person. The same view is expressed by Bloomfield (1933, 21) and other American structuralists: One of Hockett's (1960, 90) «design features» of language is «vocal-auditory channel». And in generative grammar the «mental grammar» comprises a *phonological* component (Nordgård and Åfarli 1990, 17), so it has accepted the structuralist view. But cognitive grammar accepts that the «phonological representation» includes written characters and gestures. One may comment that if so, *phonological* is misleading – a survival of the structuralist view of language as exclusively spoken.

As Vachek (1989, 106) points out, Saussure's definition of the sign expression as *phonic* – a «sound image» – does not agree with his statement that language is «form» (1967, 157), where «there are only differences without positive terms» (1967, 166) and where the expression is «not constituted by its material substance, but only by the difference between it and other sound images» (1967, 164). Sound is a material substance and a sound image is the corresponding mental substance. Nor does it accord with his statement (1967, 26) that Whitney is right to say that the nature of the sign is inessential and that what is specific to man is «...the ability to create a language, i.e. a system of distinct signs corresponding to distinct concepts».

And Whitney *is* right. It is evident that at least written and gestural language consist of signs with expression and content just like spoken language, only with other types of expression, and that Saussure's limitation to phonic expression is too narrow. Even if speech is our oldest and most important sign system and the basis for our language centers and linguistic faculty, we have later developed also other sign systems with other expressions. We can now choose sign system depending on the situation: If people can't hear, are far away or we want to reach a large number of people or «speak to the future», we can use gestures or writing instead of speech if we have the competence to do so.

Thus we have several sign systems that differ with respect to «modality», «medium» or expression. That gestural languages are sign systems of their own, is perhaps obvious, but the same goes for written language: Unlike *transciptions*, ordinary, *orthographic* writing does not render speech, but *expresses* a message, follows its own rules and may use words that we can't pronounce (e.g. exotic names) and characters that have no correspondence in speech (e.g. quotes or parentheses). Therefore we need a *general* sign concept which is neutral as to type of expression and can use *any* expression that can be perceived – also drawings on toilet doors, traffic signs, light signals or whatever. As long as there is a *definite expression* with a *definite content*, both conventional, i.e. known and used in a group of people, we can use the expression to communicate within that group. And therefore we should not describe expression in general as *phonological*, even if it is usual to speak of «phonology» also in gestural language. A sign in general just has an *expression*, which must be specified in each type of sign system.

And each type of expression has different potentials for the structuring of usage and texts. In speech we can use *prosody*, in writing we can use *capitals* or *italics*, or *logograms* like *5* or @, and gestural language can use *mimicry* and *the space in front of the sender*, and *point* to intended referents in different places. Written language has developed conventions for text structuring that we now cannot do without: *spaces* to delimit words, *capitals* on the first word and *punctuation marks* to delimit and specify utterances, and the division of large texts in parts like *chapters* or *sections* with *headings*, *paragraphs* etc., thus making a written text far more *structured* than a spoken

one. Writing is normally *edited*, speech is normally *improvised*. Even if one tries to plan a speech, it is next to impossible to plan it in detail without the use of writing.

However, written and especially spoken language have a special status: Spoken language is our *first* language, both phylo- and ontogenetically, and is the only truly *universal* language, used by all normal members of all societies. Also written language is rapidly becoming more or less universal, at least passively, as receiver (reader). Moreover, they are *parallel* systems, especially in alphabetic writing, where also the *expression* (the pronunciation and the spelling) and the *expression systems* (the sound system and the alphabet) are more or less parallel. Lexico-grammatically, *standard* speech and writing can be practically identical, with mainly *quantitative* differences: Certain words and constructions are more common in one or the other and may be «literary» or «colloquial», but all of them can be used in both systems. Almost anything that can be said, can also be written (with exceptions like tonemes in Scandinavian), and vice versa (with exceptions such as parentheses, quotes and capital letters). The reason is that speech has been the *model* for writing, i.e. that writing has been heavily influenced by speech. Pizzuto et al. (2007, 1) use *verbal (language)* as a common term for both. Since most people – including myself and my honoured readers – are competent in both, «verbal» signs, mainly written ones, are used as examples here.

2.3.3 Arbitrariness and Iconicity

- *Motivation is unnecessary, but advantageous*

Saussure underlines (1967, 100) that the connection between expression and content is *arbitrary* or *unmotivated*: The expression is not «iconic» or motivated by the content, and any expression can have any content and vice versa. Whitney states the same: The link between expression and content is «a mental association as artificial as connects, for example, the sign 5 with the number it stands for" (Silverstein 1971, 115).

Langacker (1987, 12), however, says that the principle is «easily overstated», and that it is not arbitrary that English *stapler* means what it means (being a combination of the stem *staple* and the agentive suffix *-er*). Saussure (1967, 181) makes the same point when he compares French *vingt* (20) and *dix-neuf* (19, literally *ten-nine*), og says that the first word is unmotivated while the last one is relationally motivated «because it evokes the thought of the words it consists of». But both examples concern the relationship between *parts* (constituents) and *the whole* in complex signs, respectively a derivation and a compound, not between expression and content. That the meaning of a complex sign is a product of the constituents – «the compositional principle» (Lyons 1995, 204) – is of course not arbitrary.[6] The examples are therefore not arguments against the claim that the expression is unmotivated in most *simple* signs in spoken (and written) language.

But that cannot be an essential quality of signs. In pictorial writing *all* signs are iconic – just as the pictorial signs we still use on toilet doors and traffic signs. In gestural language iconic signs are typical, according to Bergman (1978, 10–12) and Armstrong et al. (1995, 191–192), and gestures may also be motivated «indexically», by pointing to (something that is connected with) the referent. In Swedish gesture language 'red' is expressed by pointing to the lips (Bergman), and in American gesture language both 'chinese' and 'onion' is expressed by pointing to the eye (Jackendoff 1993, 87–88). Corballis (2002, 112) says there is a tendency for iconic signs in gesture languages to become arbitrary by *simplification*, and the same thing happened in pictorial writing.

Lyons (1977, 103) points out that motivation is «medium-dependent»: In English *cuckoo* is motivated in speech, but not in writing. The arbitrariness in spoken language is due to the fact that it is almost impossible to imitate concepts

[6] Nor is it entirely predictable from the constituents. A *stapler* might have denoted a *person* and not a machine, and *dix-neuf* might have meant '90' (10 *multiplied by* 9) or '1' (10 *minus* 9) instead of '10 *plus* 9'. The word just tells us that its meaning has to do with the numbers 10 and 9, not *how* the numbers are related. That is decided by usage, i.e. convention. In French '90' has the expression *quatre-vingt-dix*, four(times)twenty(plus)ten, where two semantic factors are implicit and have to be known.

with *sounds*. The only thing one can imitate by sounds, is *other sounds*, e.g. what animals «say». Here *visual* systems like writing or gestural language have a big advantage. However, emphatic stress (and italization in writing), which has a content and must be regarded as a sign, could be regarded as iconic: One emphasizes the content of a word by emphasizing the expression.

Corballis (2002, 112) underlines that what is decisive, is that the relation between expression and content is *conventional*, corresponding to Hockett's (1960, 90) design feature «traditional transmission». That goes for gestural language as well (Schröder 2006, 99). Meier (2002, 15) says that the language faculty "...does not demand that all words and signs be strictly arbitrary. Instead what is key in both speech and sign is that form-meaning pairs are conventionalized". Meier also points out that arbitrary expression is necessary for concepts that are not «imageable», such as abstract concepts, and Hockett (1960, 90) that arbitrariness has the advantage that «...there is no limit to what can be communicated about».

According to Corballis (2002, 112), «the switch from iconic to arbitrary signs» *is* conventionalization, but that is not the case. Also onomatopoetic words are conventional, as already Whitney pointed out (Koerner 1972, 15). English pigs say *oink*, but Norwegian ones say *nøff*. Both imitate grunting, but in different ways. Also gestures may be motivated in different ways in different gestural languages, e.g. the sign for 'tree' in American, Danish and Chinese gestural language (Meier et al. 2002, 172). Johansen (1993, 121) points out that the signs on toilet doors are conventional although they are iconic: One has to know that they denote *toilets*, not ladies and gentlemen. Lyons (1977, 100–101) at first uses *arbitrariness* and *conventionality* synonymously, but then adds that "...it has become clear that *arbitrary* and *conventional* are not equivalent».

The conclusion is that *all* linguistic signs are conventional, whether arbitrary or motivated. But motivation is an advantage. The Roman numbers *I, II, III* are motivated, while *IV* and *V* are not. Therefore the first are easier to learn than the last – we can *see* what they mean. One *might* decide that *I* should mean '2' and *II* should mean '1', but that would obviously not be smart. However, motivation is neither necessary nor always possible. Writing everywhere has lost its original iconicity because people found they didn't need it and were better off simplifying the characters.

Guiraud (1975, 31) says that «...motivation frees the sign from convention, and [...] purely representational signs can function without any preceding convention». But it's rather the other way round: Signs cannot be freed from convention, and as Saussure (1967, 108) points out, they can be arbitrary because they are founded on *tradition*, i.e. tradition or convention frees the sign from motivation: Linguistic conventions may be unmotivated because they connect a certain expression to a certain content by *agreement*, so that the users don't depend on a similarity between them to associate them with each other. But if it is possible to let the expression suggest the content, the sign is easier to learn and remember.

2.3.4 Linearity

- *Expression units and signs do not have to be linear*

Saussure (1967, 103) also underlines that the expression is *linear*, which means that the spoken expression units – speech sounds and syllables – and consequently the signs they express, form a *chain* in a specific *order* in time. Writing is also linear, but in *space* instead of time, and the direction of the chain may vary: The segments may be ordered in either *lines* or *columns* and go from *left to right* or vice versa. According to Henry (1970, 89), linearity only applies to *usage*: It is when we *utter* («actualisons») the units of spoken language that we enter into time. In *language* there is no chain, and everything exists *simultaneously*. Likewise Spang-Hanssen (1954, 100). However, there is linearity and order also in language, as there are *syntagmatic* rules that govern the order of e.g. sounds or letters in words or constituents in sentences. The order in usage is a reflection of these conventions.

Sounds and letters are necessarily linear. But some expressions may be *simultaneous*. In gestural language several signs may be expressed simultaneously (Armstrong et al. 1995, 90). With an example from Norwegian gestural language (from *Store norske leksikon*): 'Are you hungry?' can be expressed with three simultaneous signs, one for 'hungry', one for 'you' and one for 'question' (apparently none for 'are'). Also the expression units of gestures: motion, configuration and location, are produced simultaneously and not sequentially (Armstrong et al. 1995, 69). And if we regard *emphasis* as a sign (a suprasegmental morpheme) in speech, we have simultaneous signs also in speech and writing, e.g. the word form *you* and the italics in *Are* YOU *hungry?* Also expression units like word tones and distinctive stress, e.g. in English *con*DUCT and *con*DUCT, are simultaneous with the syllables they belong to. So *exclusively* linear expression is not a necessary quality of signs in general. Both expression units and signs may be simultaneous when made with *different articulators*.

2.3.5 Expression Systems: the «Double Articulation»

- *Double articulation is advantageous, but not necessary*

Double articulation (Martinet 1965, 2) or duality of patterning (Hockett 1960, 90) means that the expression normally is «articulated» or *complex*, consisting of meaningless *expression units* (occasionally one, as in the English article allomorph *a*) selected from an *expression system*, in spoken language *syllables* and *speech sounds* forming a *sound system*. An example of duality from Langacker (1987, 298) is the spoken word form written *picnics*, consisting *phonologically* of the *syllables* /pik/ and /niks/, which can be further analysed in *phonemes*, but *grammatically* of the *stem* /piknik-/ and the *inflectional suffix* /-s/, which are *signs* with a meaning. Syllables and sounds have no meaning by themselves, but can combine according to certain rules to form *expressions* (pronunciations) with meanings, e.g. /pik-nik/ or /p-i-t/. Thereby, they also distinguish (the expression of) different signs from each other, e.g. /pit/ from /bit/ or /pin/ (distinctive function). With a small number of sounds plus rules for combinations of these into syllables, allowing /p-i-t/ but not */p-t-i/, the expression system makes a large number of expressions possible, of which only some – such as /p-i-t/ or /t-i-p/, but not /p-i-m/ or /d-i-t/ – are assigned meaning and are actual expressions.

And the expression system is independent of the sign system and can thus consist of far fewer units than there are signs. As Lyons (1981, 61) puts it, «... the phonological structure of a language is not determined by its syntactic structure and its syntactic structure is not determined by its phonological structure». Hence, there can be a *conflict* between phonological and grammatical rules. A well-known example in Norwegian is the imperative form of verb stems ending in a consonant + /r, l, n/: What is the imperative of verbs like *ofre* (sacrifice), *sykle* (cycle) and *åpne* (open)? Here, speakers usually are at a loss. According to the grammatical rule that imperatives consist of the stem, the imperative of *ofre* should be *ofr* but is usually pronounced as *ofre*, i.e. the infinitive is used instead. It seems easier to break a grammatical rule than a phonological one: that syllables may not end in a consonant + /r, l, n/.

A parallel expression system is the *alphabet*, so alphabetical writing, both phonemic and syllabic, has double articulation as well. The letters correspond to expression units in speech, either phonemes or syllables. Also sign languages are assumed to have expression units, which according to Stokoe (1960, 40) are *position*, *configuration* (i.e. the shape of the active hand), and *motion*. Like speech sounds or letters, these features have no meaning by themselves, only in certain combinations. Stokoe (1960, 33, 43) uses the term *cheremes* for these gestural expression units, and Hjelmslev (1966, 43) calls expression units in general *figures*. Here, I simply use *expression units* as a common term for speech sounds, letters and the features that gestures are composed of.

Double articulation is usually considered as a necessary quality of signs systems or languages.

According to Armstrong et al. (1995, 37) duality has been put forth as «the very essence of language». But there are writing systems without expression units, where the characters are *meaningful* (logograms) and thus constitute signs – words or morphemes – by themselves, like chinese characters or our own logograms, e.g. *?,+, =, §, %, &, $, @* and the number symbols *0–9*, which may be combined to form complex signs for larger numbers, such as *90*. Each character is a complete sign expression and normally corresponds to a *word* or *morpheme* in speech. In English, the number '9' may be written either alphabetically as *nine*, with an English spelling consisting of 4 letters which correspond to sounds and may be pronounced as /nain/, or logogrammatically as *9*, which has the same meaning but is international and may be pronounced in any language that has a word for '9'. Also closed signs systems like traffic lights or gestures like nodding (see next section) lack expression units.

This shows that an expression system and double articulation is not a *necessary* quality of signs systems, not even open ones like writing. They can do without, but at a price: Without an expression system one needs as many sign expressions, i.e. characters, as there are signs, which is a big load on memory. According to Wikipedia the largest chinese dictionaries have 85 000 characters, but to read a newspaper about 3 000 is enough. In spoken language something corresponding is impossible, as we can only produce a finite number of sounds. There we need a complex sign expression, normally composed of different combinations of a small number of expression units (sounds). In writing we can do without.

2.4 Signs

2.4.1 Open and Closed Sign Systems

If the expression may be anything observable, also traffic signs and lights must be sign systems (see the analysis of traffic lights in Hjelmslev 1973, 123 f or Johansen 1993, part III). They communicate a message, either *information* (e.g. 'a sharp turn in front') or a *command* (e.g. 'Stop here'): «the traffic lights speak to the road users in words or in sentences, or even in imperatives…» (Hjelmslev 1973, 124). Red light *tells* us to stop, and there is punishment for ignoring the command.

The difference between the traffic lights and spoken, written or gestural language – in addition to type of expression – is that the traffic lights are an extremely *small and simple* sign system or language with neither double articulation nor grammar: a *closed* or *limited* system with a special purpose – to express a few messages to drivers at a crossing. It is limited because it consists of four signs that can't be combined, making four messages possible: red light = 'stop', red and yellow light = 'prepare to go', green light = 'go' and yellow light = 'prepare to stop'. Ordinary languages are *open* or *unlimited* sign systems for communication *in general*, where minimal signs (morphemes) can be *combined* into *complex* signs that can express any message. Hjelmslev (1973, 122) distinguishes between «*…restricted languages*, which can only serve definite purposes» and «*…unrestricted* or *pass-key languages*, which can serve any linguistic purpose». Also Hockett (1960, 90) distinguishes between closed and open systems, under the heading of «productivity». Such closed sign systems are used by some animals, which «…typically have a small, closed set of signals for conveying particular, biologically critical meanings» (Fitch 2010, 173). An example is a set of warning alarms for various kinds of predators among vervet monkeys (Seyfarth et al. 1980).

Also the few gestures that we all use instead of or together with speech – pointing, waving, nodding, shaking the head, 'thumbs up', 'give the finger' etc. – can be said to constitute a limited system of signs without double articulation and grammar, while gestural languages are open systems with double articulation and grammar. According to Tomasello (2008, 62–63) these everyday gestures are either «attention-directing» or iconic. An attention-directing or perhaps *demonstrative* gesture is pointing, meaning 'Look at *that*' (i.e. what I am pointing at) or '*There* (i.e. where I am pointing) it is'. Iconic gestures might be waving towards yourself to make someone come closer or holding a raised hand in front of you (like an obstacle) to make someone stop. Iconic gestures can also be *improvised* – pantomime. An example

from Tomasello (pp. 67–68) is a security guard at an airport making a circular movement with his hand to make you turn around. But gestures like nodding (usually for 'yes') or shaking one's head (usually for 'no') are neither demonstrative nor iconic.

2.4.2 Signs without a Specific Expression?

- *Spoken, written and gestural languages are sign systems of their own*

Unlike Saussure himself, Hjelmslev and some other linguists have taken the consequence of Saussure's claim that language is «form», i.e. *relations* or *functions*, not «substance» or *qualities* and consists of only differences (Saussure 1967, 166–169). Namely by saying that the expression is neither phonic nor graphic (nor has any other material substance), but may be realized in any substance (Hjelmslev 1966, 93, see also Gullichsen 1990, 28). This view seems to be quite widespread today. According to Bouchard (2013, 146), the sign is «modality-independent». Bolhuis et al. (2014) regard speech and gesture as different «externalizations» of language, and Hurford (2014, 106) says that «…underlying the medium in which language is expressed, whether signed or spoken, is a system which is independent of the medium».

Here both written and gestural language are accepted as language – but not proper, independent languages, just as «modalities» or expressions of the *same* language, which is neither spoken nor written nor gestural. This means that we have an *abstract* language, consisting of signs without a *specific* expression. Such a language is difficult to conceive, especially if also gestural language is a realisation of it, because it has a quite different structure from «verbal» languages, which are *parallel* and therefore more easily seen as the same system. It is not only the type of *expression* that separates the three «modalities»; also the *signs* may differ. For example, there are no signs in speech that correspond to parentheses or quotes in writing. These are exclusively written signs.

The claim that language is «form» and does not have any qualities, is untenable. Spang-Hanssen (1954, 102) points out that «any difference […] presupposes a similarity», and *differences* can only mean 'different *qualities*'. Nothing can consist of functions or relations without qualities – there must be *something*, with specific qualities, that *has* a function and relations *between entities* with specific qualities. Harder (1996, 26) is right in saying that "Extreme structuralism […] will not do: substance matters, and structure presupposes substance" (see also the critique of Hjelmslev's view in Garvin 1954, 91 f, Eco 1984, 23, Vachek 1989, 109 f and Johansen 1993, 49).[7] In addition, the view that speech, writing and gestures represent the same sign system implies a favouring of the *content*, which is of the same kind (conceptions) in all «modalities» while the expression varies. But that is of no consequence for the identity of the sign and the language: It is the content which is constant and defines the sign and the language. But signs are defined by *both* expression *and* content, and have a *specific* expression as well as a specific content – not any expression. That's why *synonyms* are different words though they have the same content.

If so, also signs with different *types* of expression such as sounds and letters must be different signs. The alternative to Hjelmslev's view, which especially the Prague structuralist Vachek (1989) has argued for, is to regard spoken and written language (and even more gestural language) as *different signs systems* instead of different realisations of the same one. For example, the spoken word /bit/ and the written word *bit* in English must be different, but *semantically corresponding* words, just like German *Ochs* and French *bœuf* (with expressions of the same type), and spoken and written English are different sign systems. Even if they represent the same *national* language (i.e. English) – a sociolinguistic concept and the usual meaning of *language* in everyday

[7] If language is pure form, [h] and [ŋ] must be considered as allophones in Germanic, since they are in complementary distribution and therefore non-distinctive. But if substance matters, allophones must be *phonetically related* and the difference must be conditioned by *the phonetic context*, which excludes [h] and [ŋ]. Unfortunately, the claim that language is form became the central tenet of European structuralism, but led the theory straight into the realm of fogginess and unrealistic abstractions.

speech – they are not the same language in the basic sense of 'sign system'. And unlike *Ochs* and *bœuf* /bit/ and *bit* have expressions of different *types* – speech (pronunciation) and writing (spelling) – which *correspond* to each other: Each sound corresponds to a letter (a rather unusual case in English), so spoken and written words and texts can be *translated* to the other system according to grapho-phonological rules (which can be rather complicated in English). In other words, to read aloud a written text or write down a spoken one is a *translation*, as Haas (1970) underlines. And not all units can be translated: Very useful written signs like quotes are untranslatable to speech, although people sometimes try to mimic them by gesturing with the fingertips. But that is not speech.

2.4.3 Words and Grammar BETWEEN Expression and Content?

There's hardly a linguist who does not speak of expression and content (or meaning), but not all linguists think that they are *directly connected* as parts of a *sign*. One example is Gil (2000, 176), who says that there is «...a crucial difference between human language and most other semiotic systems, such as, for example, traffic lights [...], where *red* means 'stop' and *green* means 'go'.» Namely that "...the relationship between sounds and meaning is not direct [...]. Instead, the relationship is mediated by various intervening entities: the linguistic forms [...] which constitute the basic building blocks of linguistic analysis". From this follows «the autonomy of syntax», i.e. that syntax is a totally abstract system *between* expression and content, where the units have neither an expression nor a content (see Faarlund 2005, 41, or Teleman et al. 1999, vol. 1, 41).

Such entities certainly don't occur in usage and, in a usage-based account, not in the language that is used either. *Between* expression and content there is nothing, and linguistic forms, i.e. lexical and grammatical units, do not *intervene* between sounds and meaning, they *consist* of sounds (or other expressions) and meaning, so they can be *observed* and *understood*. In other words, they are *signs*, either minimal signs like *Stop!* or complex signs like *Stop here!* And traffic lights are an exact parallel to morphemes or word forms: *Stop!* means 'stop' exactly like red light, and the connection is just as direct. In both cases we have a conventional (and unmotivated) combination of an expression and a content, and instead of the red light one could have had a screen that showed *Stop!* Neither the red light nor the morpheme, word form and sentence *Stop!* exist *between* expression and content – both *have* or *consist of* an expression (a spelling) and a content or meaning. The greatest difference between closed sign systems like the traffic lights and open systems like spoken, written or gestural languages is that the open systems have a *grammar* that makes it possible to *combine* smaller signs into larger signs according to certain rules, so that we get complex, grammatical signs and as many signs as we need to express any thought. Let's turn to such signs.

2.4.4 Complex Signs: Grammar

- *Complex signs consist of signs, not expression and content*

Because signs can be combined into larger signs according to grammatical rules, it is essential to distinguish between *minimal* and *complex* signs. In my view, only minimal signs consist of expression and content. Complex signs consist of *smaller signs* – the *constituents*, as they are usually analysed in grammatical analysis. The minimal sign and the smallest unit of grammar is well-known: the *morpheme*, e.g. *stop* (a lexical morpheme) or *-s* (a grammatical morpheme – plural, genitive or present, 3. person singular). Such signs can only be analysed in expression and content (which may be further analysed). But morphemes may be combined according to *morphological* rules into complex *word forms* such as *stop-s* (present, 3. person singular), composed of a *stem* and an *inflectional suffix* that is relevant for such (verbal) stems.[8] And word

[8] Following Lyons (1981, 101), I distinguish between *words* (lexemes), which are abstract *lexical* units in the *language* (the lexicon), and *word forms*, which are concrete *grammatical* units in *usage and texts* (and as types in the language), in writing separated by spaces. In inflected words, word forms are *inflectional* forms, but some words have special *unstressed* forms. The verb *(to) have*, e.g., consists of the verb forms or verbals *have*, *has* and *had*, which can be

forms may be combined to *syntagms* according to *syntactic* rules, e.g. sentences like *Stop here*, composed of a *verbal*, i.e. a verbal word form, and an *adverbial*. Now *stops* of course may be analysed in the expression S-T-O-P-S and the content 'stop + present 3. person singular', but they don't make *one* sign – they make *two*, a stem and a suffix, each with expression and content. We should distinguish between combinations of *expression and content* (minimal signs) and combinations of *signs* (complex signs).

Furthermore, the combination of signs is *recursive*: Signs may be combined into larger signs, of the same or a different type, which may be combined into still larger signs etc. This way we may have a compound (as a constituent) in a larger compound or a sentence in a larger sentence. Therefore, complex sign must often be analysed on *multiple levels*, as syntactic «trees» show. *Stop at the first crossing* must be analysed on three levels, because it consists of three syntagms of different types: a *sentence*, a *prepositional syntagm* and a *nominal hypotagm* (usually called «phrases», but phrases may consist of a *single* word form, so *syntagm* and *hypotagm* are more precise for phrases consisting of several word forms).

What is the *maximal* sign of language? Probably *sentence types* or, more generally, *utterance types*, which are the maximal units of grammar. Texts (e.g. this one) cannot be called signs because they are not *conventional*, but *individual* products. So are sentences, but they realize *constitutive* or *structural* – lexical and grammatical – conventions and a conventional sentence type like statements or passives, or an other utterance type (e.g *Yes* or utterances of the type *You fool!*), and can therefore be full of *mistakes* (breach of rules). Constitutive rules must be followed. Sentence types (and other constructions) belong to a language, texts do not, although they follow *regulative* or *functional* conventions, i.e. pragmatic and stilistic norms that govern the *use* of language, like Grice's maxims (see Searle 1969, 33 f or Dyvik 1995, 24 for these two types of conventions). You can break everyone of them and still speak or write grammatically (but perhaps not very comprehensibly or sensibly). Texts *consist* of signs, but *are* not signs themselves. That's why sentence types are the object of *grammar* and texts of *text linguistics, rhetorics, conversation analysis* etc.

combined into the verbal syntagm *have/has had*. Word forms are the *largest* units (the subject) of morphology and the *smallest* units (ultimate constituents) of syntax, so they are a central type of sign.

2.4.5 The Linguistic and the Semiotic Sign

- *The linguistic sign is a category of its own, not a subtype of semiotic signs*

The linguistic sign is usually considered as a subtype of the broader, «semiotic» sign category, which is everything that «stands for» or is connected to something else, called their «object». They are usually divided into three categories: *indices*, which are natural, and *icons* and *symbols*, which are artificial (Liszka 1996, 34, Leira 1971, 12, J. Martinet 1976, 51 f). Indices are naturally connected to their object and *indicate* – show or suggest – something, e.g. *smoke* as a sign of *fire* or *yellow leaves* as a sign of *autumn*. They include *symptoms*, i.e. physical conditions that indicate an illness or a mental state, e.g. *fever* as a sign of certain *illnesses* or *trembling* as a sign of *fear* or *excitement*. The connection is natural and thus *necessary*, namely *cause* and *effect*: Fire is the cause of smoke and illness the cause of the fever. We can *infer* from the effect to the cause, but that is not *communication* and does not presuppose any sign system. As Mounin (1985, 30) points out, «...there is no a priori code for the interpretation of indices». Indices do not *express ideas*: Blushing does not express the *concept* 'shame' like the letter sequence *shame* does, but is associated with the *feeling* of shame, i.e. the *non-linguistic referent* of *shame*.

Therefore, blushing is not communication or a linguistic sign, although it can reveal a lot about the blushing person. It's not a conventional expression and doesn't have any meaning in the linguistic sense. Communication presupposes the sender's *intention* to communicate, as Guiraud (1975, 27–28) and Mounin (1985, 23) point out. The sender has to produce at least one utterance, and one does not do so without a purpose, even if

the purpose is not always communication, as when swearing. Also Johansen (1993, 336–337) mentions «purposiveness» and «communicative intent» as defining qualities for traffic lights and other sign systems. And one doesn't blush intentionally to convey something. But physical factors that one can *control* can be used in communication. J. Martinet (1976, 47 f) contrasts coughing as a *symptom* (of e.g. a cold) with coughing as a «signal» or *sign* used in communication, such as warning someone that somebody that is being talked about, is approaching. A similar case is smoke as an *index* of fire versus smoke *signals*, e.g. when a new pope is elected. Both instances are informative, but only in one case is there an intent to communicate and a conventional sign – we have to learn that coughing or clearing one's throat can function as a warning in situations where we cannot speak.

Icons are *representations* of their object – photographs, pictures, sculptures, maps, models etc. – and usually *resemble* it (except non-figurative paintings). Like indices, icons do not represent concepts, but *things* – people, objects, places etc. – or *events* (e.g. a battle). The difference between a *picture* of a house and a *depicting written sign* for 'house' (as a simplified drawing of a prototypical house) is that the picture represents the *house* while the written character represents the *idea* of a house, the concept 'house'. It has a precise, conventional expression as well as content: We cannot draw the house as we wish and we're not depicting any specific house, but the idea of houses in general. Therefore, we can communicate precisely with the written sign, but not with the picture.

Symbols are connected to their object by *convention*, e.g. the *cross* as symbol of *Christianity*, the *flag* as symbol of the *nation* or *red* as symbol for *socialism*. Also linguistic signs are often called *symbols* by American linguists. According to Peirce, *words* are symbols, and their object seems to be the referent, not the meaning (Liszka 1996, 34, 39). But we should distinguish between linguistic signs and symbols in the everyday sense, as Saussure (1967, 101) does, using the scale as a symbol of justice as example. Saussure seems to think that the difference is that symbols are more or less *motivated*, and also Guiraud (1975, 32) says that symbols are «analogical» or «iconographic». They often are – it's not accidental that the cross is a symbol of Christianity and green a symbol of conservation of nature. The scale as a symbol of legal justice is a *metaphor*: Legal justice is like a scale where one considers the evidence both for and against the defendant's guilt and sees which «weighs» the most. So the scale is motivated. But many flags are unmotivated, and why is red a symbol of socialism? And as we have seen, also linguistic signs can be motivated, so motivation cannot be the defining difference between signs and symbols.

The crucial difference is again that symbols like indices and icons are not connected to *ideas* but to *things*, usually abstract *social phenomena* – religions, ideologies, nations etc. The cross does not represent the *idea* of Christianity, but the *religion* itself, i.e. the non-linguistic *referent* of the word *Christianity*. Therefore, symbols are not normally used to communicate, but to *visualise* the (invisible) referent. We *can* communicate with them, e.g. by using the cross to communicate 'Christian' or 'Christianity' in a rebus. But that is *non-linguistic* communication and there is no precise content. If we want to express or communicate ideas, the expression must be connected to *ideas*, not to objects.

Mounin (1985, 53–54) warns against using the same word (i.e. *mean*) for «the interpretation of indices» and «the comprehension of signals», and Bickerton (1995, 13) distinguishes between meaning which «…can be inferred by an observer», e.g. in *That cloud means rain*, and meaning which «…is intended by an agent", e.g. in *kindly leave means* 'get the hell out'. In the interpretation of «signals» or signs we have to do with *intended* or *communicated* meaning. But also intended meaning is *inferred* from the expression, based partly on the conventional *content* of the sign and partly on the *situation* (including the context): What does the sender mean by the sign *here and now*? No convention can tell us who *I* refers to in a particular text; instead we must know who's speaking or writing. That is, we have to *infer* the reference from the

signs the sender has used plus knowledge of the situation and the world in general. So in usage meaning is *both* intended by the sender *and* inferred by the receiver.

Thus, both indices, icons and symbols in the everyday sense differ from linguistic signs both structurally and functionally. Structurally, they are *unilateral* units and comprise natural phenomena. As physical entities, they correspond to the *expression* in the linguistic sign. However, they are not related to *ideas* but to *physical, mental or social phenomena* – the non-linguistic *referents* of the corresponding linguistic signs. In other words, they have no *content* and are not *expressions*. A fever or a flag does not *mean* illness or a nation in the same sense as CAT means 'cat'. We can infer something from both fever and words, but we infer different things, respectively a *state* of a person (a certain illness) and *ideas*. Functionally, linguistic signs are primarily instruments of *communication*, while the other «signs» are not. Linguistics should not accept the broad and imprecise use of words like *sign* and *mean(ing)* in everyday speech and semiotics. Both Peirce and Saussure are trying to unite phenomena that don't constitute a uniform category. Although linguistic signs may have iconic and indexical *qualities* (e.g. in metaphors and metonyms), they don't have much in common with «semiotic signs» and should not be considered a subtype of such signs, but as a category of their own.

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ABSTRACT

Research on the vitality of Chetti Malay Creole, the heritage language of the Melaka Chetti community at Kampung Chetti, Malacca, has consistently reported a language shift. Since language shift often leads to language loss, this study seeks evidence of language loss and attrition among the younger generations, specifically among the fourth and fifth generations (G4/Gen Y and G5/Gen Z) Chettis. Using a language loss assessment (adapted from O'Grady et al. 2009), the study found that Chetti lexicon is largely absent from the younger generations' vocabulary and they struggle to construct short sentences in Chetti Malay, which indicate the lack of a working knowledge and use of their heritage language. Focus group interviews further reveal that many Chetti lexical items are unfamiliar to the younger generations since the language is spoken sporadically at festivals or among older generations. The findings place the vitality of Chetti Malay at Level 7 Shifting on the EGIDS while on the UNESCO Language Vitality and Endangerment framework Chetti Malay is definitely endangered. The study confirms that there is language shift, loss and attrition at Kampung Chetti. The study raises a critical question for further research on whether the lack of knowledge of Chetti vocabulary and the inability to use the language among the millennials and digital natives a case of attrition (total or partial forgetting of the vocabulary as a result of the language being rarely used) or incomplete acquisition (a language never acquired due to non-intergenerational transmission of Chetti Malay in their homes).

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I. INTRODUCTION

Malacca (Melaka in Malay), the historic city of Malaysia, is the epitome of ethnic and language blending. As early as the 15th century, there was already an international community of traders trading at the port during the Malacca Sultanate (Figure 1).

Source: Hussin (2006:17)

Figure 1: Movement of traders in the Malay Archipelago

Linguists who visited Malacca in the 1930s were acutely aware of the inhabitants' bilinguality:

'In Hilir the people are almost all polyglots: they speak Christian (i.e. Portuguese), they make fun in English, and they market in Malay…'

(Silva Rêgo, 1936 cited in Knowlton, 1964: 212)

In addition to the multiculturalism and bilingualism taking place, intermarriages between the foreigners and local women further enhanced the long-term mingling of different cultures and languages, resulting in three creole communities: the Melaka Portuguese (Kristang) community, the Baba Nyonya (Peranakan Chinese) community, and the Melaka Chetti/Chetti (Peranakan Indian) community. These *Peranakan* (locally born from mixed marriages between foreign conquerors or traders and local women) communities became permanent settlers in Melaka thus creating new ethnic and cultural groups (Hussin 2007) and displayed a high degree of sociocultural adaptation towards the dominant Malay culture in the Malay Archipelago. A prominent feature of these heritage communities is their creole language which often comprises a lexifier language (superstrate) and a substrate: for instance, Papia Kristang or Malacca Creole Portuguese has Portuguese as the lexifier and Malay as the substrate; in the case of the Melaka Chetti Malay creole, naturally the superstrate is Malay infused with Tamil vocabulary and a few Hokkien (a dialect from Fujian, China) words adopted from the Baba Malay creole.

As a mother tongue Chetti Malay creole is used by the older generations for communication and in their worship to the Hindu deities. However, researchers assessing the vitality of the language (Omar et al. 2016; Hamzah et al. 2020; Hamzah and Chong 2021; Hamzah et al. 2022) have consistently reported a language shift taking place thus raising concerns about the vitality and endangerment of Chetti Malay. Since language shift often results in language loss (Wurm 1991), this study seeks evidence of language loss among the younger generations. Accordingly, the research questions are: What is the vitality status of Chetti Malay on the EGIDS and UNESCO Language Vitality and Endangerment (LVE) framework based on the findings of this study? What is the evidence of language loss among the fourth and fifth generation (Gen Y and Gen Z) Chettis?

1.1 The Melaka Chetti (or Chetti) Community and Kampung Chetti: A Brief Background

The Melaka Chetti (Chetti) community are descendants of social amalgams (interethnic marriages) between South Indian traders from the Coromandel coast in India and the local female population in Malaya (now Malaysia) between 1402 and 1511 (Mohamed, 2009a; Neo & Varghese, 2017). Despite their Indian names and celebration of Indian and Hindu festivities such as *Ponggal, Deepavali, Bhogi Parchu* (Chetti ancestor worship), Chetti acculturalization into the Malay indigenous culture is largely reflected in their language, dressing and cuisine.

Most of the Chetti community live at Kampung Chetti (Chetti village) (Figure 2). The residential Chetti village comprises thirty families (Mohamed 2009a) or a hundred plus Malay-speaking Hindus (Pillai 2015) living in quaint half brick half wooden houses (Figure 3).

Figure 2: Kampung Chetti, Jalan Gajah Berang, Melaka

Figure 3: Quaint Chetti houses in Kampung Chetti

Kampung Chetti is highly prized by the Chetti community for its identification with their ancestral roots and is a popular research site for research on minority groups, language and cultures in Malaysia[1].

II. LITERATURE REVIEW

2.1 Chetti Malay creole (CMC) or Chetti Malay

The mother tongue of the Chettis is 'a variety of Malay which displays a rich and interesting mix of different cultures' (Mohamed 2009b: 8). According to Mohamed (2009a; 2009b), the Melaka Chetti Malay creole (henceforth CMC) developed from the pidgin Bazaar Malay[2] which

[1] For more detailed descriptions and illustrations of the Chetti community & Kampung Chetti, refer to Loh & Jegatheesan, 2017; Narayana & Paramasivam, 2017.

[2] Bazaar Malay is non-standard Malay; it is also known as Pasar (Market) Malay or 'Pasar Melayu'.

was the lingua franca among the foreign traders in the Malay Archipelago during the Malacca Sultanate (c.1400 - 1511). CMC is therefore a result of language contact between Malay, the dominant language spoken in Melaka and Tamil, the paternal ancestral language of the community. Frequent, close interactions with the Baba Nyonya community brought substantial influences from Baba Malay creole especially in its pronunciation and the incorporation of Hokkien words such as *bimpo* (handkerchief) and Hokkien pronouns such as *gua* (I) and *lu (you)* into Chetti Malay. Nevertheless, Baba Malay creole contains more Hokkien lexical items while a large proportion of the vocabulary of CMC is borrowed directly from the Tamil language, for example, *nalla* (good), *illa* (no), *ubayam* (auspice), *poosarï* (priest), *abishegam* (bathing the deity), *maalai (*garland), thaltha (grandfather), tenggai (coconut), ingi (ginger) (Raghavan, 1977; Sarkissian, 1997; Sukri, 2017, Mohamed 2009a).

According to Mohamed (2009a), CMC has six vowels (Table 1) and nineteen consonants (Table 2).

Table 1: The vowel sounds in Chetti Malay Creole

	Front	Central	Back
Close	i		u
Close-mid	e	ə	o
Open	a		

Source: Mohamed (2009a:44)

Table 2: The consonant sounds in Chetti Malay Creole

Manner of Articulation	Place of Articulation					
	Bilabial	Alveolar	Alveolar-Palatal	Palatal	Velar	Glottal
Plosive voiced voiceless	b p	d t	č		g k	ʔ
Approximant voiced			ǰ			
Nasal voiceless	m	n	s	ɲ	ŋ	
Fricative voiced						h
Trill		r				
Lateral Approximant		l				
Half (Mid) vowel	w			y		

Source: Mohamed (2009a:48)

Although CMC shares a number of similarities with other Malay dialects in the region, according to Mohamed (2009a) there are distinctive phonological and linguistic characteristics in CMC such as variation of the phoneme /a/, deletion of phoneme /r/, deletion of phoneme /h/, monophthongisation of /ai/ and /au/, phoneme deletion in consonant clusters of trisyllabic words, phoneme insertion and replacement of phonemes /f/, /v/, /z/.

2.1.1 Variation of the Phoneme /a/

Asmah (1991) differentiates two patterns of pronunciation for the sound /a/ at word final position in Malay: the shwa/central vowel [ə]

variety and the [a] variety. In Malaysia the pronunciation of /a/ as [ə] is common in the southern and central states of Johor, Malacca, Selangor and Pahang while the pronunciation of /a/ as [a] is found in the northern states of Perlis, Kedah, Penang and in Sabah and Sarawak in East Malaysia (Borneo). In CMC /a/ is pronounced as [a] but recently younger generation Chetttis articulate /a/ as [ə] in contrast to the older Chettis (Mohamed 2009b).

2.1.2 Deletion of the Phoneme /r/

Historically, the /r/ diaphones existed in the Malay language in Peninsula (West) and East Malaysia but linguistic development caused the /r/ diaphones to disappear in the central and southern states in West Malaysia (Asmah 1991). In CMC the phoneme /r/ at word final position was part of the its structure but due to the influence of language use, education and the media, the phoneme /r/ at word final position has been dropped thus the younger Chettis, like most Malaysian and Singaporean speakers would say /bəna/ instead of /bənar/ (Mohamed 2009b).

2.1.3 Deletion of the Phoneme /h/

Another prominent characteristic of CMC is the deletion of the phoneme /h/ in almost all positions. Some examples of /h/ being dropped at word final position are /dara/ for /darah/, /suda/ for /sudah/ and /itam/ for /hitam/, /alos/ for /halus/ for deletion of /h/ at word initial position. With reference to this, Mohamed (2009b) points out that Chetti Malay displays the characteristics of its origin, the Bazaar Malay pidgin which has the phoneme /h/ deleted at word initial and word final positions. The same process occurs in other Malay dialects such as the Malayu Ambong creole language, the Jakarta Malay dialect and the Sri Lanka Malay creole which most likely also originated from Bazaar Malay, the lingua franca in the Malay Archipelago spoken in the ports and trading centres of Malacca, Jakarta and the islands of Borneo. The /h/ sound is also almost completely non-existent in the Bazaar Malay spoken by Tamil speakers (who were the fore fathers of the Chetti community). The deletion of /h/ in all positions in Malay words was also highlighted by Collins and Schmidt (1992:299 cited in Mohamed, 2009a) such as /ari/ for /hari/, /idgo/ for /hijau/, /payit/ for /pahit/, /cassian/ for /kasihan/, /mira/ for /merah/, /sompa/ for /sumpah/[3].

2.1.4 Monophthongisation of /ai/ and /au/

CMC has only diphthong /oi/ and a limited number of words using it. Of greater importance are the diphthongs /ai/ and /au/. The diphthong /ai/ in CMC underwent the process of monopthongisation (the process of two vowel sounds shifting to one vowel sound) thus words that have /ai/ at word final position in Standard Malay (SM) are articulated as /e/ which is a half-close front vowel in Chetti Malay and the diphthong /au/ at word final position in SM words undergoes a shift in vowel quality and is articulated as /o/, a half-close back vowel in CMC. Some examples of words in SM ending with /ai/ and their pronunciation in CMC are gadai (SM) → gade (CMC), misai (SM) → mise (CMC), serai (SM) → sere (CMC); words in SM ending with /au/ and their pronunciation in CMC include kalau (SM) → kalo (CMC), kurau (SM) → kuro (CMC), limau (SM) → lemo (CMC) (Mohamed 2009b:15-16).

It is said that the monophthongisation process causes the vowels /i/ and /u/ to be lowered and articulated as /e/ and /o/ respectively. Mohamed (2009b) highlights that this process is also evident in Baba Malay which strongly suggests that Baba Malay creole share the same source of origin, that is, the pidgin Bazaar Malay (Pasar Malay/Market Malay).

2.1.5 Phoneme Deletion in Consonant Clusters of Trisyllabic Words

Ellipsis (leaving out a sound or sounds in speech) is common in Malay words with three syllables that contain consonant clusters at the border of the syllables. Mohamed (2009b) explains that the clusters are usually a voiced plosive consonant /b/ but when it is also followed by a nasal, often in speech the cluster loses its consonant sound and is left with the nasal sound. Examples of

[3] The original spelling of the authors is retained here.

trisyllabic Standard Malay (SM) words that underwent the clipping in CMC are 'sembilan' → 'semilan', 'sembahyang' → 'semayang', 'sembunyi' → 'semunyet'.

2.1.6 Phoneme Insertion

In CMC insertion of phoneme /k/ and the glottal stop /ʔ/ usually occur at word final position especially with words ending with the vowel sounds of /i/, /a/, /u/. Examples of these phoneme insertions are: 'bawa' → 'bawak', 'bapa' →'bapak', 'cari' → 'carik', 'garu' → 'garok', 'nasi' → 'nasik'.

2.1.7 Replacement of Phonemes /f/, /v/, /z/

According to Mohamed (2009a), in CMC the consonants /f/, /v/, /z/ are replaced by /p/, /b/, /ǰ/ respectively. Examples of these replacements are: 'faham' → 'paham', 'fasal' → 'pasal', 'vitamen' → 'bitumen', 'zaman' → 'ǰaman', 'rəzəki' → 'rəǰəki'.

2.2 Assessing Language Vitality and Endangerment

Different metrics are available for assessing language vitality and endangerment: Fishman's (1991) Graded Intergenerational Disruption Scale (GIDS), the University of Hawaii's Language Endangerment Index (LEI), Ethnologue (2009) Language Vitality Categories, the UNESCO (2011) Language Vitality and Endangerment (LVE) Framework and the Expanded Graded Intergenerational Disruption Scale (EGIDS) (Lewis & Simons 2010). Among these, the vitality scales most often used by researchers are the UNESCO framework and the EGIDS.

The UNESCO Language Vitality (LV) Index identified nine factors for the assessment of language vitality and endangerment and measures for maintenance or revitalization. With reference to Figure 4, Factors 1 – 6 assess the vitality of the language from the community's engagement with its language, Factors 7 – 8 focus on the attitudes towards the language and Factor 9 evaluates the urgency for documentation.

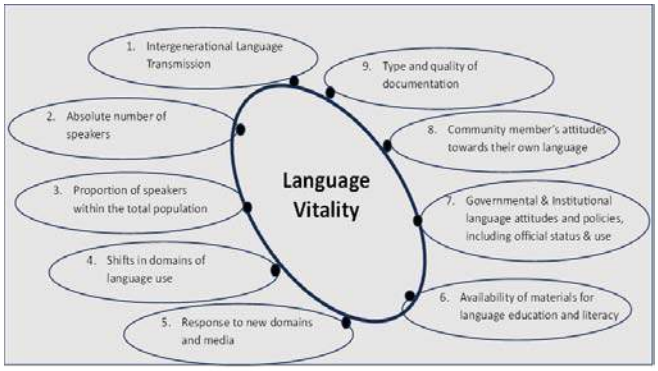

Figure 4: UNESCO Language Vitality Index (UNESCO 2009).

Despite advice that no single factor in the LV Index be used to assess a language's vitality, not all researchers applied the nine factors in their investigations. Factor 1 (Intergenerational Transmission of the Language) is the most critical factor in language vitality thus researchers often focus on this variable alone and accordingly, use the six degrees of endangerment with regard to intergenerational transmission to assess the vitality and endangerment of the language (Table 3).

Table 3: UNESCO Language Vitality and Endangerment Framework (UNESCO 2011)

Grade	Degree of endangerment	Intergenerational Language Transmission
5	Safe	The language is spoken by all generations; intergenerational transmission is uninterrupted.
4	Vulnerable	Most children speak the language, but it may be restricted to certain domains (e.g. home).
3	Definitely endangered	Children no longer learn the language as mother tongue in the home.
2	Severely endangered	The language is spoken by grandparents and older generations; while the parent generation may understand it, they do not speak it to children or among themselves.
1	Critically endangered	The youngest speakers are grandparents and older, they speak the language partially and infrequently.
0	Extinct	There are no speakers left.

Source: http://www.unesco.org/culture/ich/index.php?pg=00139

There is also Lewis and Simons' (2010) thirteen level EGIDS which is a combination and alignment of three evaluative frameworks of language endangerment (Fishman's (1991) GIDS, UNESCO (2009) Language Endangerment Framework and Ethnologue (2009) Language Vitality Categories). According to the authors, the EGIDS provides an efficient alternative to categorizing all (not only endangered) languages and can be used for language planning, revitalization and other language projects.

The labels on the EGIDS (Table 4) summarizes the state of vitality of the language. Levels 6 – 8 focus on the daily use and intergenerational transmission of the language with levels 6a, 6b, 8a, 8b providing a finer description of the state of intergenerational transmission in the presence of language shift (or revitalization). Levels 9 and 10 focus on whether the language is a marker of identity.

Despite the availability of a number of typologies of language vitality for assessing vitality and language endangerment, the methodology used to gauge language vitality can be varied. SIL language assessment specialists study language vitality by exploring the functions (domains of use), acquisition (transmission across generations), motivation for use, governmental policy regarding language use, and distinctive niches (*particular* contexts where the language is used), as these factors foster the ongoing use of a language. The vitality of each language within a community is also further assessed by looking at the specific purposes, social contexts, opportunities and frequency that a given language is used. Sociolinguists and linguistic anthropologists investigating on language vitality seek to identify trends in language use through various means including changes in the number of speakers or changes in the use of the language in certain domains or functions. Thus, depending on the aim and purpose of the study, besides language vitality and endangerment inventories, some studies employ only basic research tools such as questionnaires, interviews and observations for data on patterns of language choice and language use in various domains to determine whether a language is undergoing shift and showing low vitality and signs of endangerment.

Table 4: The EGIDS with UNESCO endangerment levels

Level	Label	Description	UNESCO
0	International	The language is used internationally for a broad range of functions.	Safe
1	National	The language is used in education, work, mass media, government at the national level.	Safe
2	Regional/Provincial	The language is used for local and regional mass media and government services.	Safe
3	Trade/Wider Communication	The language is used for local and regional work by insiders and outsiders.	Safe
4	Educational	Literacy in the language is being transmitted through a system of public education.	Safe
5	Written/Developing	The language is used orally by all generations and is effectively used in written form in parts of the community.	Safe
6a	Vigorous	The language is used orally by all generations and is being learnt by children as their first language.	Safe
6b	Threatened	The language is used orally by all generations but only some of the child-bearing generations are transmitting it to their children.	Vulnerable
7	Shifting	The child-bearing generation knows the language well enough to use it among themselves but none are transmitting it to the children.	Definitely Endangered
8a	Moribund	The only remaining active speakers of the language are members of the grandparent generation.	Severely Endangered
8b	Nearly Extinct	The only remaining speakers of the language are members of the grandparent generation or older who have little opportunity to use the language.	Critically Endangered
9	Dormant	The language serves as a reminder of heritage identity for an ethnic community. No one has more than symbolic proficiency.	Extinct
10	Extinct	No one retains a sense of ethnic identity associated with the language, even for symbolic purposes.	Extinct

Source: Lewis & Simons (2010:28)

2.2.1 Language Vitality, Shift, Loss and Attrition

According to SIL (2014), language vitality is demonstrated by the extent that the language is used as a means of communication in various social contexts. The most significant indicator of a language's vitality is its daily use in the home. A language with high vitality is used extensively in daily communication by members of a community, inside and outside the home, by all generations, and for most topics of conversations; in contrast, a community language that is not used suffers decreasing number of speakers and the threat of language loss and attrition as it undergoes language shift.

When language shift takes place, it is 'manifested as loss in the number of speakers, level of proficiency or a range of functional use of the language (Hornberger 2012: 412). According to Anderson (2014:104), 'language shift also constitutes a loss' with the former referring to the community's ongoing change from using their first/native language to another language over a century while loss denotes vocabulary and registers that have fallen into disuse during the language shift process. Schmid (2011:3) considers language loss a generic term that can refer to any of these states: the phenomenon of change or reduction of linguistic knowledge, the shift from one language to another in a community over several generations or to the overall extinction or death of a particular language. Literature on language loss and language attrition generally refer to loss as pertaining to loss of the use of a language at the community level while attrition refers to individual loss of proficiency and vocabulary due to lack of regular use of a language. Schmid defines language attrition as the loss of a (first) language in healthy (not aphasic) individuals due to total or partial forgetting of a language as a result of the language being rarely used.

First language attrition is usually caused by isolation from speakers of the first (native) language alongside increasing use of a second language for communication. Language attrition involves simplification in the tense system, disuse of some vocabulary of the native language and/or re-structuring of phonetic features. In attrition, children are more likely to lose their first language than adults (Köpke & Schmid, 2004). According to Schmid (2011), the bilingual mental lexicon is often the most vulnerable area of linguistic knowledge in language attrition. To investigate whether lexical access and lexical knowledge have attrited, a number of tasks can be given to the speakers such as picture naming tasks, picture word matching tasks, verbal fluency tasks, grammatical judgement tasks, to name a few.

2.3 Investigations on Language Vitality and Endangerment in Malaysia

According to Ethnologue language vitality count there are 93 endangered languages in Malaysia (https://www.ethnologue.com/country/MY/). To date, studies on the vitality and endangerment of minority languages in Malaysia can be categorized into three groups: research on the indigenous languages of Malaysia, research on the Chinese dialects spoken in Malaysia, research on the creole languages of Malacca (Melaka). As this study is on the Melaka Chetti Malay creole, we shall only review studies on Chetti Malay.

2.3.1 Past Research on Chetti Malay Creole (CMC) or Chetti Malay

The first major documentation of Chetti Malay creole as a written language was published by Noriah Mohamed (2009a) in her book *Bahasa Melayu Kreol Chetti Melaka: Deskripsi Leksiko-Fonologi* (Malacca Chetti Malay creole: A Lexical-Phonological Description). Despite her focus on the linguistic system of Chetti Malay, in her concluding chapter she highlighted the challenge of maintaining the use of the Chetti language among the younger generations due to urbanization, migration, and competition from English and Standard Malay. Following this, Omar et al. (2016) investigated language choice among the Chettis in the family and social domains. Using (self-report) questionnaires on 50 respondents they found that a) only when communicating with their peers Chetti is used, b) in the home domain English and the Chetti language are the main language choices for communication, c) in the social domain English is

the preferred choice followed by Malay. They concluded that generally the Chetti language has high vitality since it is still chosen as a conversational language by family members in the home domain and to a lesser extent in the social domain. Nevertheless, the authors opined that a language shift has already been initiated when a dominant language like English is competing with the Chetti language as a means of communication. After this language choice study, there were three consecutive research discussing the survival of the Melaka creole languages (Hamzah et al. 2020), the vitality of Chetti Malay creole (Hamzah & Chong 2021) and language shift in the Chetti community (Hamzah et al., 2022).

Hamzah et al. (2020) reviewed all literature on the three creole languages of Malacca (Papia Kristang or Malacca Creole Portuguese, Baba Malay creole, Chetti Malay creole) and came to the conclusion that language shift is inevitable and the future of the Melaka creoles is bleak. Following this, Hamzah and Chong (2021) investigated on the vitality of the Chetti Malay language. Self-reported data was collected mostly online from 36 respondents through a 'Language Use and Attitude' questionnaire replicated from Coluzzi et al.'s (2018) preliminary study on the vitality of Baba Malay in Malacca. Responses to the questionnaire indicated that the majority of their Chetti respondents a) claim to speak Chetti Malay fluently, b) identify CMC as their mother tongue, c) use CMC with family members and d) have a positive attitude towards Chetti Malay. With these findings, the researchers assessed the vitality of Chetti Malay as straddling between *Level 6a Vigorous* and *Level 6b Threatened* on the EGIDS. Using data from this 2021 study, Hamzah et al. (2022) then examined how differences in language choice between the younger and older generations indicate whether there is language maintenance or shift in the Chetti community. From the responses, they identified a pattern of reported language use: firstly, although the younger generations maintained the use of Chetti in the family domain they have also begun to use English while in the social domain English is definitely the preferred choice; secondly, the older generations are more determined to use Chetti Malay on a personal level but at societal level there is a tendency to use other language(s). In sum, despite a favourable attitude towards their heritage language, CMC is losing ground as the language of the majority is gaining dominance and domains therefore language shift is definitely taking place within the Chetti community.

III. THE STUDY: INVESTIGATING LANGUAGE VITALITY IN THE MELAKA CHETTI COMMUNITY, KAMPUNG CHETTI, MELAKA

The project which is part of a research training program to mentor (especially junior) academic staff in the principal investigator's institution to conduct research, comprises two parts: Part A 'Investigating cultural maintenance and identity in the Melaka Chetti community' (this has been published); Part B 'Investigating language vitality in the Melaka Chetti community'.

In addition to previous studies highlighting Chetti Malay is undergoing an inevitable language shift, incidentally, during our fieldwork for Part A of the research project, we observed that while the older generations spoke Chetti in their ancestor worship rituals and during the Dato Chachar ceremonies, the younger generations hardly converse in Chetti (Lee & Ravindran 2024). Taking into consideration that language shift often leads to language loss (Wurm 1991), we decided to extend the investigation on the vitality of Chetti Malay, focusing on obtaining concrete evidence (instead of self-reported data) of language loss among the 4th and 5th generation (G4 and G5) Chettis. Henceforth, what is needed is a simple and concise assessment of knowledge of the creole and the use of Chetti Malay among G4/Gen Y and G5/Gen Z.[4]

[4] A limitation of the study is its modest number of younger generation respondents for the LLA and FGI. The small number is due to the practical constraints of recruiting G4 and G5 respondents living in Kampung Chetti only. In future, recruiting younger generations from Chetti families not necessarily living in the Chetti village can provide a larger pool of respondents.

3.1 Methodology

3.1.1 Research Instrument 1: The Language Loss Assessment (LLA)

O'Grady et al.'s (2009) psycholinguistic tool in the HALA (Hawaii Assessment of Language Access) Project was designed for the assessment of and early diagnosis of language loss. Due to its adaptability, it is being used to investigate a variety of phenomena, including heritage language acquisition, linguistic proficiency as well as language attrition in children. Hamilton et. al (2013) adapted it to assess language change in Eastern Indonesia. For our investigation to detect language loss and attrition among Generations 4 and 5 (Gen Y and Gen Z) in the Chetti community, we have adapted it into a language loss assessment with specific aims and focus to suit our enquiry. In addition to the body-part naming task, we added two more sections and the sections and test items are ordered with increasing difficulty; secondly, naming times are not recorded as the focus is not on the speed (not to correlate naming times with the frequency of use of the word) but on their accuracy in naming the body parts in Chetti Malay. Lastly, unlike the HALA project, the (bilingual) respondents in the Language Loss Assessment (LLA) are not tested in two languages but are assessed for their knowledge of and use of only one language, the Chetti mother tongue.

The LLA was designed with input from two principal informants who are fluent speakers of Chetti Malay. The LLA (see Appendix A) comprises fifty items designed to test knowledge of Chetti vocabulary and use of the Chetti language. The LLA contains three sections: Section A (with picture stimulus) is a simple body-part naming exercise for participants to name parts of the body in Chetti Malay; Section B (with picture stimulus) comprises a list of common daily actions which participants are to describe in Chetti Malay; Section C (without picture stimulus) comprises two tasks: Task 1 is a list of everyday vocabulary (such as 'bathroom', weekdays) in English and respondents are to give the Chetti Malay equivalent of the vocabulary items listed in Questions 1 – 17 while Task 2 (questions 18 – 23) are short sentences in English for respondents to construct in CMC.

3.1.2 Research Instrument 2: Focus Group Interviews (FGI)

The focus group interview (see Appendix B) is intended to initiate the two generational groups to discuss their responses in the LLA. The FGI is also a means to elicit information on the language choice and languages used in the respondents' homes which would inform us on the language shift situation in the community.

3.1.3 Participants

As the aim of the investigation is to confirm that there is language loss as a result of the language shift taking place in the Melaka Chetti community at Kampung Chetti, Melaka, the participants selected for the LLA and the FGI have to be living in the Chetti village. Unfortunately, there are not many youngsters living at the Chetti village hence in total we were able to recruit only thirteen participants (seven from G4, six from G5) (Table 5).

Table 5: Participants for the Language Loss Assessment (LLA) and Focus Group Interviews (FGI)

The younger generations* (Generational cohorts)	Born Between:	Age range at the time of the study (years old)	No. of participants
G4 Gen Y (Millennials)	1981 - 1996	38-23	7
G5 Gen Z (Digital Natives)	1997 - 2012	22 – 9	6
Total			13

**G4 and G5 are the younger generations; in Part A of the project G1 (The Silent Generation), G2 (The Baby Boomers), G3 (Gen X) are the older generations (cf. Lee & Ravindran 2024).*

3.1.4 Procedure

The LLA was administered by the principal investigator (PI) with the assistance of a Chetti speaker and two research assistants (RA) in the house of the principal informant. Two rooms were allocated for the LLA: Room 1, the test room and Room 2, the quarantine room. RA 1 ushers each participant into Room 1 for the LLA oral test. Upon completion of the test, RA 2 ushers each participant into Room 2 to be quarantined until all the participants have undergone the assessment. The 'quarantine' is to ensure there is no discussion/contact between those who have not and those who have taken the assessment.

English is used in the instructions and communication with the respondents. The PI conducts the LLA while the Chetti speaker records the responses. Testing of each section begins with an explanation of the task in each section. For Section A the PI holds up the picture stimulus and points to the part of the body in each picture, the respondent names the body part in Chetti Malay and the Chetti speaker records the answers. For Section B, each picture is shown accordingly, the respondent describes the actions in Chetti Malay and the responses are recorded. For Section C Task 1 the PI reads out each word from the list in English, the respondent says it in Chetti Malay and the responses are recorded; likewise, in Task 2 the PI reads the short sentences in English, the respondent say it in Chetti Malay and the responses are recorded. All sessions were audio recorded for checking purposes when the responses are analysed.

Following the LLA, the two generations form two focus groups and take part in the focus group interviews led by the PI and two academic staff. The aim of the focus group interviews is to discuss the language tasks in the LLA: what the respondents found difficult and reasons behind the challenges. In addition, there were also questions prompting information on Chetti language use in the homes and community. Clearly, the aim of the focus group interviews is twofold: to discuss the Chetti lexical items and sentences in the LLA and to also elicit information on Chetti language use or disuse in the community.

IV. FINDINGS AND DISCUSSION

This section presents the findings from the language loss assessment and the focus group interviews. Figure 5 presents the average scores of G4 and G5 across the three sections of the LLA. Note that as the respondents progress from Section A to Section C, the scores decrease indicating that they have difficulty in responding to the tasks.

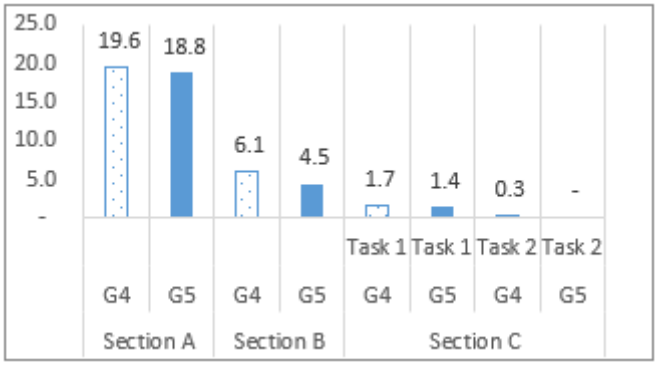

Figure 5: Average scores in the Language Loss Assessment

In Section A, both generations performed well (only 9 'errors' out of the twenty items) and almost perfect average scores of 19.6 and 18.8 for G4 and G5 respectively. The nine 'errors' are one incorrect answer for Question 7 from a G5 respondent, three incorrect entries for Question 11 from G4 & G5, two no answers for Question 18 from G4 and G5, three incorrect answers for Questions 19 – 20 from G4 and G5. At first glance, the overall high scores seem to indicate that G4 and G5 can speak or have been speaking Chetti Malay. However, further analysis reveals the

actual situation: the names of the body parts in Chetti Malay are the same as they are in the lexifier language (Standard Malay); in other words, there is no variant lexicon or different pronunciation for body parts in Chetti Malay. In view of this, the respondents are most likely naming the body parts in Standard Malay but we are not able to discern this since the Chetti lexicon and their pronunciation for body parts are similar to Standard Malay. This being the case, the body-part naming exercise alone is insufficient to assess knowledge of Chetti Malay vocabulary (including its pronunciation).

Section B assesses the respondents' knowledge of action words in Chetti Malay. Of the seven action words, two verbs have a Chetti creole version (unlike Section A where all the items had no variant form from the lexifier language, Standard Malay). G4 performed well with an average score of 6.1 out of a total of seven questions since three respondents (out of seven) responded correctly to all the items in Section B. In contrast, none of G5 had an all-correct response to the section thus decreasing the average score to 4.5. Five G5 respondents answered incorrectly using Standard Malay 'pergi' while one of them did not respond at all. Incorrect answers due to the Standard Malay form 'pergi' being used instead of Chetti Malay 'pegi' show no knowledge of 'Deletion of the phoneme /r/' ruling (cf. section 2.1.2) while usage of Standard Malay 'fikir' instead of Chetti Malay 'pikir' indicate no knowledge of 'Replacement of phoneme /f/ with /p/ (cf. section 2.1.7).

Section C, without any picture stimulus, is definitely the most difficult level. For Task 1 respondents need to possess a ready knowledge of Chetti vocabulary to mentally retrieve for the common Chetti words listed in questions 1 to 17 while Task 2 demands the productive skills of constructing short sentences in Chetti Malay. The extremely poor results of an average score of 1.7 and 1.4 out of 17 for G4 and G5 respectively in Task 1 reveal that these Chetti vocabularies are definitely not part of the younger generations' lexicon while the drastic decrease of scores to 0.3 and 0 for G4 and G5 respectively for Task 2 confirm the respondents' almost zero working knowledge of Chetti Malay. These findings signify that there is language loss taking place in the Chetti community manifested as lexical attrition among the fourth generation G4 and the fifth generation G5 (Gen Y and Gen Z respectively).

Table 6: Responses in the focus group interviews

Questions	Gen 4 (Gen Y)	Gen 5 (Gen Z)
1. What do you think of the language tasks in Section A?	Ok. Doable. Easy.	Not really difficult. Can do.
2. What do you think of the language tasks in Section B?	Qs 1 – 3: ok. Qs 4 I said 'pergi' but incorrect? I didn't know it's 'pegi'. Never heard it before. I think it should be 'fikir' lah.	Why 'pergi' not correct? 'Pegi'? But in school it's 'pergi'. 'Pikir' I've heard before. My grandma used to say, 'Pikir baik baik'.

3. What do you think of the language tasks in Section C? Task 1: Task 2:	Ayo, this section susah. 'Chiwan'? Never heard this word. I think I only know nbr (question) 6. My grandma used to cook 'kepiting', that's why I know. 'Nyari' for today, what a strange term. Why 'Hari' is 'Ari'? 'Loteng'? My grandma said 'pande'. Maybe 'pande'and 'pake' is the same way to say it. 'Kasi' also not baku, it's colloquial, right? I've heard '(h)ijo' but didn't know it's the short form for 'hijau'.	Yes, difficult especially Task 2. I think I got zero [laughter]. 'Piso'? What is that? Haven't heard of 'bimpo'. I've heard of 'besok' but never thought it's Chetti Malay. Strange that you add numbers (numerals) (Satu, Dua, Tiga…) to days of the week. Don't know this word. We don't know all these words…pande, pake… 'Gua' and 'lu' is not Bahasa baku, right? Strange how 'nasi' has 'k' so become 'nasik'. 'Ijo'? What's that?
4. Who speaks Chetti in your family? How fluent? How often? Do they speak Chetti to you?	My parents can speak here and there but they usually speak English more. When relatives come, my grandparents and parents will use Chetti more.	My grandparents can speak well but parent I don't know how good. Very seldom, we speak more English.
5. Do you hear Chetti being spoken when you go about the village? Do you (try to) speak Chetti?	Unless the older folks are together, you can hear some Chetti. If I speak we mix languages especially when not sure of the words.	Sometimes but at festivals yes, a bit more. Young people very seldom, maybe names of food. Yes we mix languages cause that's how we talk in Malaysia, kan?

The thread of discussion on language loss at the community level and attrition at the individual level continues with the focus group interviews. With reference to Table 6, respondents found Section C difficult as they do not know most of the Chetti lexicon and struggled to construct sentences in Chetti Malay. Responses in the interviews reveal that a) the respondents realised that they have no knowledge of many Chetti lexical items b) some of the younger generations find the words like 'nyari' for 'today' and adding numerals (Satu, Dua, Tiga…) to denote days of the week strange (alien) c) the younger generations do not understand why 'Hari' is 'Ari' or why 'pergi' is 'pegi' indicating ignorance of the distinctive characteristics in Chetti Malay such as the deletion of the phonemes /h/ or /r/.

On an equally important note, the focus group interviews report Chetti being spoken sporadically at festivals or when relatives visit. On whether the younger generation (try to) speak Chetti, the 'Very seldom, we speak more English…' replies indicate the younger generations' notable proclivity toward the use of English, even in intimate family settings. In addition to English gradually supplanting Chetti, the language dynamics also include a discernible trend of blending Chetti with other languages. These linguistic adaptations among the youth signify a dynamic shift in linguistic preferences and raise legitimate concerns about the potential threats to the sustained use of the Chetti language. Another pivotal point is that although the older generations (grandparents and parents) are able to speak Chetti there is no attempt to transmit Chetti Malay to the younger generations since only 'when the older folks are together, you can hear some Chetti.' All these indicate that the

younger generations are not exposed to much Chetti language use in the community as well as in the private domains of their homes which strongly suggest that they did not acquire their ancestral language as a mother tongue in the home.

The dynamics of language loss and attrition did not go unnoticed in the recent studies on the vitality of the Chetti language. In Hamzah et al.'s (2020) comprehensive review of the three creole languages of Malacca, a widespread decline in the usage of creoles within family domains foreshadows an inevitable language shift and impending language loss and attrition. The prevailing sentiment prioritizing English acquisition over creole proficiency further exacerbates the loss of these heritage languages. Within the Chetti community, Hamzah & Chong (2021) identify a perceptible shift where English increasing replaces Chetti in social interactions while at the same time there is a gradual, steady tendency to use more English in the family domain. In terms of a generational shift in language proficiency, Hamzah et al. (2022) observe that while the older Chettis predominantly regard the Chetti language as their most fluent language and their mother tongue, among the younger generations, a subtle shift is observed, with some expressing greater fluency in English and Standard Malay. The convergence of findings from these three prior investigations on the vitality of the Chetti language underscores the complex interplay of linguistic dynamics, generational shifts, and external influences contributing to the disuse of Chetti Malay in the community and leading to a reduction of linguistic knowledge and proficiency among the younger Chettis.

V. CONCLUSION

The aim of the study was to find evidence of language loss to support earlier claims that an inevitable language shift is taking place in the Chetti community at Kampung Chetti, Melaka. Based on the findings of the study, the current vitality of Chetti Malay on the EGIDS would be at *Level 7 Shifting (The child-bearing generation knows the language well enough to use it among themselves but none are transmitting it to the children)* while on the UNESCO Language Vitality and Endangerment Framework it is *'definitely endangered'* (*Children no longer learn the language as mother tongue in the home)*. This low vitality status of CMC is obviously the result of the third and to some extent the second generation's (G3 and G2) decision to cease using Chetti Malay in their communication with their young in the private domain of family and home. This shift to other languages spoken in Malaya/Malaysia then and now and the non-intergenerational transmission of the ancestral language in the Chetti homes bore grave repercussions of language loss at the community level and attrition at the individual level. With decreasing Chetti language use across the generations, the Chetti patois suffered a loss in the number of Chetti speakers in the community. Language attrition manifests most noticeably in the speaker's vocabulary, that is, in their lexical access and their mental lexicon (Ammerlaan 1996; Kitaek Kim and Hyunwoo Kim 2022). Evidence of lexical loss is revealed most significantly in the very poor scores especially in Section C in the language loss assessment administered on the 4th and 5th generations (Gen Y and Gen Z). Their inability to mentally retrieve Chetti lexicon due to unfamiliarity with Chetti Malay vocabulary indicate lexical access and lexical knowledge have attrited in the two generations investigated in the study. A main cause of language attrition is lack of regular use (of a language) (Köpke and Nespoulous 2001 cited in Anderson 2014:122). The younger generations' struggle to construct simple sentences in Chetti Malay reveal insufficient exposure and poor working knowledge of CMC due to the lack of regular use of their ancestral language. To conclude, the study confirms that there is language shift, loss and attrition in the Melaka Chetti community at Kampung Chetti, Malacca.

This is the first research on Chetti Malay that highlights how language shift, loss and attrition are closely linked; secondly, the study provides (preliminary) empirical evidence (instead of self-reported data) on the loss of the language. Due to the language shift and loss of Chetti Malay, the younger generations at Kampung Chetti are

subjected to reduced Chetti language input which naturally provides inadequate language acquisition of Chetti Malay. In Montrul's (2010) discussion of issues in heritage language acquisition, reduction of input & use of the target language in restricted contexts led to incomplete heritage language acquisition as they remain imperfectly acquired, depending on the amount of input received. With reference to the findings of our study, is the lack of Chetti lexical knowledge and wanting proficiency in Chetti Malay among the millennials and digital natives a case of language attrition (total or partial forgetting of the vocabulary as a result of the language being rarely used) or incomplete (L1 or heritage language) acquisition? As these queries are beyond the scope of this study, these topics certainly deserve a separate investigation in future research.

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Criticism of Brazilian Academic Capitalism and the Commodification of Knowledge Raw Materials

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ABSTRACT

The present research seeks to analyze the logic of Brazilian academic capitalism that conditions a process of commodifying the production of knowledge, as well as prioritizing the offer of training courses for liberal professionals. This process is characterized as raw material knowledge contributing to the creation of a type of World Class University. Concerning the methodological procedures of the research, it was decided to develop a bibliographical and documental research based on the critical-dialectical epistemology. Content analysis was used in the treatment of data. Thus, the text is systematized in three parts: it analyzes the concept of crisis and how the capitalist economy was permeated by tensions throughout the year.

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ABSTRACT

The present research seeks to analyze the logic of Brazilian academic capitalism that conditions a process of commodifying the production of knowledge, as well as prioritizing the offer of training courses for liberal professionals. This process is characterized as raw material knowledge contributing to the creation of a type of World Class University. Concerning the methodological procedures of the research, it was decided to develop a bibliographical and documental research based on the critical-dialectical epistemology. Content analysis was used in the treatment of data. Thus, the text is systematized in three parts: it analyzes the concept of crisis and how the capitalist economy was permeated by tensions throughout the year.

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I. INTRODUCTION

The logic of capitalist expansion transforms everything and everyone into merchandise. Due to the creative capacity of capital, services are not beyond its reach. Its expansive logic, especially in its parasitic speculative phase, affects education. Marx comprises two types of goods: labor power and other goods, which can be conceived as a service, in addition to not needing to be exclusively physical/material, in fact, goods can be immaterial. According to Tregenna (apud Rikowski, 2017, p. 397), "commodities are not limited to physical goods and similarly, 'production' is not limited to the physical production of a tangible object".

Understanding that capital seeks a perfect language for goods to meet and adapt to the logic of sociability, culminating in its consumption, education is metamorphosed and adapted according to capitalist transformations. In this sense, education experiences a process of becoming capital.

With the crisis scenario that capital faced at various times in the 20th and 21st centuries, it became essential to search for other areas so that it would be feasible to extract profit. Higher education emerges, then, as a strategic sector for capital, as public/state funding is configured as a seductive source to be absorbed. According to Rikowski's research (2017), the global educational market in 2015 was worth $4.9 trillion (USD). We add to this the investment of approximately $2 billion in venture capital in education in 2014, which shows a growth in investment of around 45% in the period of the Great Depression from 2009 to 2014. This global education scenario, therefore , highlights the source of the interests of the business sectors, thus stimulating the commodification of higher education and its resulting privatization and commodification.

The business sectors that set eyes on higher education are industrial and service sectors, with an emphasis on education. These sectors correspond to the interests of capital in general, industrial capital and fictitious capital. In addition, these sectors operate both in Private Institutions of Higher Education (IPES) and in public Higher Education Institutions (IES).

There are two forms of merchandise that José Rodrigues, in his book Os entrepreneurs and higher education, published in 2007, highlighted and which are valid in our conception: education-commodity and merchandise-education. Each of these forms of merchandise in higher education is linked to the way in which capital seeks to value itself, and each, in turn, is the face of the same coin, that is, "they are forms under which the merchandise materializes in the countryside of human formation" (Rodrigues, 2007, p. 6). Ultimately, this configuration expresses the constitution of Brazilian academic capitalism.

The examination of Brazilian academic capitalism and the implications for the commodification of raw material knowledge from the conditionalities of the capital crisis scenario is a complex task to be faced by higher education researchers. The new scenario denotes a new way of exploring higher education as a market niche, as attention is focused on the privatization of public institutions through the participation of financing funds, cooling of public investments and the entrepreneurship of the production of knowledge à la New American University (Silva Júnior, 2017).

In these circumstances, The present research seeks to analyze the logic of Brazilian academic capitalism that conditions a process of commodifying the production of knowledge, as well as prioritizing the offer of training courses for liberal professionals. This process is characterized as raw material knowledge contributing to the creation of a type of World Class University. Therefore, we sought to answer the following questions: What are the implications of the global capital crisis scenario for the constitution of Brazilian academic capitalism? Academic capitalism based on the New American University conditions a movement towards the constitution of a type of global university standard in which the gravitational axis is based on managerial rationality and on the commodification of scientific production, the local search to constitute a university program and innovative and enterprising institutes articulate with this panorama? What are the configurations of Brazilian academic capitalism with the new metamorphoses of the global learning market?

Concerning the methodological procedures of the research, it was decided to develop a bibliographical and documental research based on the critical-dialectical epistemology. Content analysis was used in the treatment of data (Bardin, 2010). Thus, the text is systematized in three parts: it analyzes the concept of crisis and how the capitalist economy was permeated by tensions throughout the year.

II. THE CRISIS OF GLOBAL CAPITAL IN LATIN AMERICA AND RECONFIGURATION OF HIGHER EDUCATION FOR THE MARKET

The concept of crisis comes from the Greek krisis that points to some decision, sentence, separation. This conception of crisis can be related to Hippocrates' conception of disease treatment, as it has the task of deciding which treatments are correct to ensure the well-being of patients' health. Certainly, physicians are assigned the role of making accurate diagnoses about diseases and illnesses, in addition to monitoring patients after medical intervention. Rikowski (2017, p. 4) considers that, for Hippocrates, the critical point of the illness is "a turning point in the strength of an illness: when it is clear that the patient is on the path of recovery, or facing death, or for less a serious debilitation". The author adds that "invoking 'crisis' as a starting point for social explanation means that recovery needs to be accounted for when this occurs".

For Holloway (1992, p. 154), the crisis point is the moment when recovery or death is at stake. He adds that the crisis as a turning point can be applied to historical and social studies, and that

> [...] crisis is not just about "hard times", but about turning points. It directs attention to

> discontinuities in the story, to breaking the path of development, breaks in a pattern of movement, variations in the intensity of time. The concept of crisis implies that history is not smooth or predictable, but full of shifts in direction and periods of heightened change.

The author understands the concept of crisis as an essential subsidy to assimilate social and historical metamorphoses. With regard to the Marxian conception and referring to the capitalist mode of production, we understand that crises are inherent to the contradictions of its modus operandi. Paulo Netto and Braz (2012) assert that crises are inescapable with capital. In fact, it is not something independent of capital, nor accidental, it is not a disease, nor an anomaly or exceptionality to be overcome under capitalism. In fact, crises are constitutive of capitalism, in other words, they are expressions arising from the contradictions inherent in its mode of production.

Paulo Netto and Braz (2012) understand that in the intervals between crises, the economic cycle systematized in four stages is put into operation: crisis, depression, recovery and boom. In summary, the authors observe that the crisis phase is indicated by an economic or political circumstance – corporate bankruptcy, fall of governments, financial scandal, etc. – implying a reduction in commercial operations, non-conversion of goods into more money, reduction or paralysis of production, falling wages, widespread unemployment and popular impoverishment; later, depression denotes that, just like the previous stage, unemployment, wages, production continue in the same logic, the goods, in turn, can be stored or dismantled, partially sold at low prices, companies seek to save themselves with the appropriation of technology to maintain some level of production – even if the goods remain at a low price –, as well as seeking new markets and using raw materials along the way. When the feasibility of recovery is pointed out, stimuli are designed to boost production; with this, the recovery stage appears, understood as a panorama in which the companies that survived incorporate the bankrupt ones to boost their production; a commercial revival emerges, as well as the resumption of prices and the reduction of unemployment. Indeed, with the restoration of production to the levels that preceded the crisis, the last stage of the cycle follows, the boom, which indicates the growth of investment in companies by capitalists through competition, launching of goods In this way, on an increasing scale in the market, productive growth takes over economic life, until a new crisis breaks out and the cycle starts again.

The structural crisis of capital (Mészáros, 2002) that erupted in the 1970s was marked by the oil crisis and the drop in the profit rate of the manufacturing sector. During this period, a stage of "[...] investment stagnation begins, with the persistent fall in the average rate of profit and devaluation of capital in the US economy, coordinator of the world trade and financial system [...]" (Grespan, 2009, p. 11). The structural crisis has reached a global reach in all sectors of production as well as in human life.

This crisis is faced with metamorphoses in the capitalist gears, which shift the strength of the productive sector to the financial institutions, thus ensuring the dematerialization of the monetary system and guaranteeing hegemony through finance. It is at the heart of these metamorphoses that "[...] geographic expansion and spatial reorganization constitute alternatives for overcoming the overaccumulation crisis, by enabling new profitable opportunities for capital [...]" (Almeida, 2006, p. 254). The subprime crisis that erupted in the United States of America in the real estate sector, in 2008, engendered a major blow to capitalist development, resulting in its expansion throughout the entire financial sector to the real economy. The reluctance to bail out the banks, the reduction in the standard of living of workers and the deepening of the public debt crisis had a negative impact on investments in the manufacturing sector.

In this sense, it is fair to emphasize that from now on, the movement of capital crisis that multilateral agencies manage to set their agenda in motion. Regarding higher education, the World Bank (WB) stands out, since its structural adjustment agenda was imposed from the context of the 1982 Debt Crisis. They were at the epicenter

of the crisis: Argentina, Brazil and Mexico. BM demanded

> [...] courageous structural adjustment reforms, as a counterpart to guarantees and loans. In the Brazilian case, one of the decisive factors to explain the prominence of rentier capital in the power bloc was the debt renegotiation undertaken within the scope of the Brady Plan, concluded in 1994, which converted the debt bonds, which were nominal, into bearer bonds. Since then, the value of the security on the market, marked by the so-called "country risk", would depend on the assessment of economic policies by the financial ones and by capital flows and inflows. In practice, governments became hostages to rentier capital, which was gradually able to increase its share of the country's economic surpluses. (Barreto & Leher, 2008, p. 430).

Henceforth, the execution of this process, the economy of Latin America became another. There was a transformation in the logic involving imports and exports, thus, primary and low-technology products, since they were basic manufactures from primary sources, went, in percentage terms, "from 58% in 1994 to 80.3% in 2003". (Barreto & Leher, 2008, p. 431).

From this context, the BM denoted several orientations for the reorganization of Higher Education in Latin American countries. Despite the WB having emphasized the need for the State to pay greater attention to secondary education, with regard to higher education, this multilateral agency oriented towards the proliferation of distance courses, directing greater emphasis on evaluation, guidelines for the standardization of curricula in which skills were highlighted, in addition to the attention given to technological innovation, in Information and Communication Technologies (ICTs), operating, in this way, a process of knowledge commodification, since the Humboldtian model of university in which teaching and research should be diluted, as well as giving priority the strategic areas for the economy, defining, strictly speaking, the Brazilian academic capitalism.

III. THE ACADEMIC CAPITALISM AS AN EXPRESSION OF GLOBALIZATION TRENDS FOR HIGHER EDUCATION

The concept of academic capitalism emerges in the studies of Slaughter and Larry (1997), within the framework of the reality of the North American university, pointing to the reorganization of the universities' routine activities and practices in search of profitability. Therefore, Slaghter and Rhoads (2010) believe that higher education institutions have become qualified to market their products. This process would be possible for the authors, through academic organization, as well as the individual practices of their professors.

With the United States of America positioning itself as hegemony among nations in the 20th century, according to Silva Júnior (2017), its culture starts to be irradiated to other social formations resulting in the reduction of the sovereignty of these countries in addition to influencing them to molds of globalization. In the 21st century, therefore, despite the structural crisis of capital, the United States maintains its position.

For Slaughter and Leslie (1997), the term academic capitalism is used to expose the way in which public universities were adapting to neoliberal demands in treating higher education policy as economic policy. Still, Slaughter and Leslie (2001, p. 154) understand that, in this panorama, the faculty, in partnership with the professional team, must channel their "human capital stocks in competitive environments".

Consequently, the cited authors assert that academic capitalism deals with

> [...] market and market-like behavior by universities and colleges. Behaviors similar to those of the market refer to institutional and teaching competition for funds, whether grants and external contracts, donation funds, university-industry partnerships, institutional investment in companies derived from professors, student fees and tuition fees, or any other revenue-generating activity. What makes these activities market-like is that they

> involve competition for resources from external resource providers. If institutions and faculty are not successful, there will be no bureaucratic recourse; they do without. Market behaviors refer to for-profit activities by institutions, activities such as patents and subsequent royalty and licensing agreements, derivative companies, corporations of limited size (corporations that are related to universities in terms of personnel and goals, but are legally as separate entities) and university-industry partnerships when these have a profit component. Market activity also encompasses more mundane operations, such as the sale of products and services from educational enterprises, for example, logos and sporting goods, profit sharing from food services and bookstores, and the like. (Slaughter & Leslie, 2001, p. 154).

The Theory of Academic Capitalism (TCA) has a double contribution: first, it makes it possible to understand the metamorphosis of higher education policies from a social welfare regiment to a privately competitive one; moreover, it provides methodological elements that make it feasible to understand the (re)formulations of partnerships between universities – in addition to the subjects that constitute them – and non-profit or non-profit organizations. In this analytical itinerary, Metcalf (2007, apud Sigahi, 2017, p. 56) emphasizes that "academic capitalism is one of the few concepts that connect higher education studies to the globalization of knowledge production".

In this scenario, it is necessary to consider, also according to Sigahi (2017), that elements that configure the mercantile logic of the New American University are situated within the conceptual framework of the TCA, namely: a) New circuits of knowledge; b) New financing flows; c) Interstitial organizations; d) Intermediary organizations and; e) Expanded managerial capacity.

At TCA, the concern is focused, in most of the analytical approach, on the production of knowledge, which leads us to the technological revolutions in which science gains centrality as a result of mass production and mass consumption, the assembly line, invention of flying transports with a weight greater than the air. For Silva Jr (2017, p. 120), "this real technological revolution, which quickly occurred, obscures the true number of revolutions that, in fact, took place, which significantly altered the scientific paradigm".

Another technological mechanism that gains prominence, in this panorama, are the digital media that make possible the irradiation of political, cultural and educational conceptions that engender severe effects on sociability. Certainly, this logic refers to the aspects that made science a developing power and to the fact that whoever dominates it will hold a strategic position in global geopolitics. In this context, the university would not remain the same, given the centrality of science imposing itself on applied-based scientific research. It is worth considering that, even with the transformations unfolded in the last 25 years of the 21st century, the university is molded to the logic of the centrality of science, as "disinterested and not applied knowledge in universities gives way to military, political and economic dimensions". Therefore, it is in this panorama that the World Class University, in the Anglo-Saxon particularity, will be constituted and will bring with it the trends of the metamorphoses of the world of work, of technological revolutions and of the flexible accumulation of capital under its financialized hegemony.

In this sense, it is crucial to highlight that the logic of the TCA emphasizes the logic of the research university. In the central axis of TCA, it is clear that research universities, both public-state and private-mercantile, have contributed – through their discoveries and productions – to economic growth. Silva Júnior (2017) asserts that the guidelines of this process are indicated by the knowledge demanded by capital on a global scale.

The New American University is contextualized from the directions of the report of the National Academic Commission, established in the North American Congress.

America is driven by innovation – advanced ideas, new products and processes that contribute to

creating new industries and jobs, contributing to the nation's health and security, and promoting a high standard of living. In the last half of the last century, innovation itself was developed by researchers and professionals for their knowledge produced. The main source of resources in the United States are new knowledge and new masters, doctors and researchers trained in this context with advanced skills that continue the mission of research universities (new American university). (Crow & Dabars, 2015 apud Silva Júnior, 2017, p. 123).

As a result of the Academic Division of Labor (DAT), high value-added processes and products have conditioned the operation of universities on a global scale. This context is centered on the logic of financialized predominance that makes possible advantages to the national states of the capitalist center. The concept of university, in the USA, deals with the "world-class university", in which its "dissemination is of fundamental and strategic interest to it, and it can do so through world institutions in view of the current global geopolitics that confers on this country privileged position" (Silva Júnior, 2017, p. 124). Thus, the type of knowledge that universities in this model produce is aimed at the globalized economy.

Since the 1970s, the New American University has been carrying out the protection of intellectual property through the Plant Variety Protection Act, using patents as a competitive instrument, under the economicist perspective of capital, being a niche to be explored by capital that Brazilian universities only started to carry out this process in the 1990s. Thus, with the scientific production focused on the interests of the market, in addition to the use of patents, it is possible to assert, especially due to its policies, that the New American University does not seek any complementary contribution to its productions, therefore, the conception of patents oppose the nature of science as well as the public good.

In this way, we understand that the New American University, which underlies the TCA, uses as one of its main commercialization pillars the logic of patenting and commercialization of academic research. However, it is noteworthy that despite being the element with the greatest weight in the TCA, other elements constitute the logic of academic capitalism. In other words, elements that correspond to new investments, marketing and consumption behavior will constitute the structure of TCA, in particular the incorporation of the identity of consumers by the student body. Even though these elements constitute a complex scenario, the very logic of globalized capital required a new type of knowledge: the raw material knowledge in which it metamorphoses into products and services, as well as the logic of offering technological courses and bachelor's degrees to the detriment of humanities.

The notion of knowledge as a raw material directed towards the economy as well as the market is a part of

> [...] results of science and its new paradigm. It is knowledge ready to be transformed into high-tech products, new production processes and services and is related to the possibility of immediate profits in the economic sphere. Here seems to be a good place to comment on what has been defined as technological innovation. When looking for the most general form of what could be understood as technological innovation, we can see that this is a process of change, invention and adaptation, which has existed since the dawn of humanity, and which would have as its objective the improvement of life and work of people and companies, adding more value to products in the shortest time possible. Certainly this definition is valid and it would be impossible to compare it in this formulation. (Silva Júnior, 2017, p. 129).

This logic, within financialization, in which interest-bearing capital operates with ease, makes feasible – based on its loan process – the unfolding of academic research in which raw material knowledge is its core. Indeed, this economic-financial notion hovers over the activities of everyday university life, conditioning research to present raw material knowledge. The raw material knowledge, within the scope of TCA, can be configured as the areas of biotechnology and information technology, since they are areas

with greater insertion and protection by patents, holders of copyrights, in addition to their trademark registrations. Under these circumstances, as well as large industrial or service corporations, universities, through the production of raw material knowledge, began to seek to extract profits from this market niche.

TCA, despite exposing contents that permeate the particularity of Brazilian higher education, cannot – at least in the way suggested by the authors – account for the dynamics of the entrepreneurship movement and, consequently, of forms of commodification of this level of education. When we look at the reality of Brazil, the logic of patents is still very incipient, despite its beginnings in the 1990s.

The research developed by Cativelli and Lucas (2016) exposes the scenario of Brazilian Public Universities (UPBs): of the 106 universities investigated, it was found that 29 universities had granted patents, which together produced 538 patents; looking at table 1, it is possible to evidence the asymmetry involving the regions. The Southeast is well ahead of other regions, as it holds 60.63% of patent applications, as well as 88.1% of patent concessions. The South region comes next with 20.13% of patents requested and 7.25% granted. Furthermore, we have the Midwest with 4.07% of requests and 2.23% of granted. Consequently, the Northeast appears with 13.43% of requests and 2.04% of concessions. Finally, comes the North region with 1.74% of patents requested and 0.38% granted.

Table 1: Number of patents requested and granted to Brazilian Public Universities by State

				Patents Granted				
Brazilian states	UPBs	Number of patents requested	(%)	IP*	UM**	C***	(=)	(%)
Acre	1	3	0,04	-	-	-	-	-
Amapá	2	-	-	-	-	-	-	-
Amazonas	2	14	0,2	-	-	-	-	-
Pará	5	104	1,47	2	-	-	2	0,38
Rondônia	1	-	-	-	-	-	-	-
Roraima	2	-	-	-	-	-	-	-
Tocantins	2	2	0,03	-	-	-	-	-
North region	15	123	1,74	2	0	0	2	0,38
Alagoas	3	34	0,48	-	-	-	-	-
Bahia	8	169	2,38	1	-	-	1	0,18
Ceará	6	135	1,9	-	-	-	-	-
Maranhão	3	44	0,62	-	-	-	-	-
Paraíba	3	106	1,49	1	-	-	1	0,18
Pernambuco	4	192	2,71	3	-	-	3	0,57
Piauí	2	58	0,82	-	-	-	-	-
Rio Grande do Norte	3	105	1,48	1	-	-	1	0,18
Sergipe	1	110	1,55	5	-	-	5	0,93
Northeast region	33	953	13,4	11	0	0	11	2,04
Distrito Federal	1	144	2,03	10	1	-	11	2,04
Goiás	2	82	1,15	1	-	-	1	0,18

Mato Grosso	2	34	0,48	-	-	-	-	-
Mato Grosso do Sul	3	29	0,41	-	-	-	-	-
Midwest region	8	289	4,07	11	1	0	12	2,23
Espírito Santo	1	33	0,46	-	-	-	-	-
Minas Gerais	13	1.264	17,8	65	17	1	83	15,43
Rio de Janeiro	7	527	7,43	36	4	-	40	7,43
São Paulo	8	2477	34,9	321	30	-	351	65,24
Southeast region	29	4301	60,6	422	51	1	474	88,1
Paraná	11	738	10,4	16	3	-	19	3,53
Santa Catarina	3	165	2,32	6	-	-	6	1,12
Rio Grande do Sul	7	525	7,4	12	2	-	14	2,6
South region	21	1428	20,1	34	5	0	39	7,25
Grand total	106	7094	100	480	57	1	538	100

Source: Cativelli and Lucas (2016, p. 71)

Subtitle: IP* Invention Patent; UM** Utility Model; C*** Certificate of Addition.

Of the 29 public universities that have had patent applications granted, the State University of Campinas (UNICAMP) and the University of São Paulo (USP) account for 57.2% of patent production. Which shows that there is a disproportion within the system of Brazilian public universities. Table 2 shows the ranking of the UPBs that had the most patents granted.

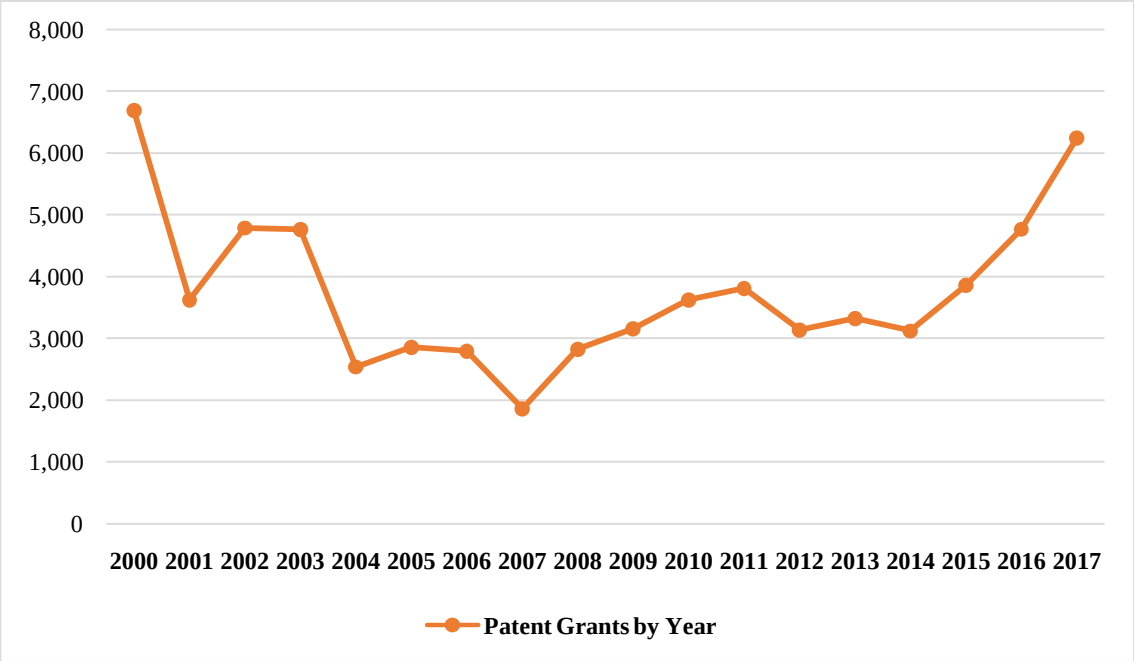
Table 2: Universities with granted patents

Order	Universities	Patents Granted	(%)
1ª	UNICAMP (SP)	170	31,6
2ª	USP (SP)	138	25,6
3ª	UFMG (MG)	52	9,7
4ª	UFRJ (RJ)	39	7,2
5ª	UFSCar (SP)	27	5
6ª	UFV (MG)	21	3,9
7ª	UNESP (SP)	13	2,4
8ª	UFRGS (RS)	12	2,2
9ª	UNB (DF)	11	2
	UFOB (MG)	6	1,1
10ª	UFSC (SC)	6	1,1
	UEM (PR)	5	0,9
11ª	UFS (SE)	5	0,9
	UTFPR (PR)	5	0,9
	UFPR (PR)	4	0,7

12ª	UFU (MG)	4	0,7
	UFPE (PE)	3	0,5
	UNIFESP (SP)	3	0,5
13ª	UNIOESTE (PR)	3	0,5
14ª	UFPA (PA)	2	0,4
	UEPG (PR)	1	0,2
	UESB (BA)	1	0,2
	UFG (GO)	1	0,2
	UFF (RJ)	1	0,2
	UGPB (PB)	1	0,2
15ª	UFPEL (RS)	1	0,2
	UFRN (RN)	1	0,2
	UFSM (RS)	1	0,2
	UNICENTRO (PR)	1	0,2
Total	29 UPBs	538	100

Source: Cativelli and Lucas (2016, p. 72)

From the exposure of these data, it is clear that there is a glaring asymmetry between the UPBs in terms of the amounts of patent grants. This asymmetry is located in the Southeast region, which concentrates 88.1% of granted patents. According to the National Institute of Industrial Property (INPI), Brazil had, in 2017, the highest number of patents granted in the last 17 years. Graph 1 shows the line of decline and growth of patent granting in Brazil, whether universities, companies or national innovators.



Source: INPI (2018)

Graph 1: Granting of patents per year (2000 – 2017)

As an examination of Graph 1, we find that, since 2000, Brazil had been declining in the number of patents granted, oscillating between the intervals of years, however, in 2017, it returned to having a similar amount to 2000, which was 6,695 concessions. of patents, and, in 2017, 6,250 were granted. Despite these numbers, this reality, it is worth noting, dialogues with the notion of TCA based on the New American University. However, the Brazilian particularity leads to another logic, that is, the leading role of the private-commercial expansion of Private Institutions of Higher Education. Now, the logic of patents, in Brazil, does not hold a large accumulation of capital nor does it have a great impact on public HEIs. In fact, in the global scenario, Brazil, according to the World Intellectual Property Organization (WIPO, 2018, apud Chad, 2018), had the worst performance compared to the 76 global offices responsible for registering patents and intellectual property.

Therefore, the TCA, despite its analytical relevance, as proposed by Slaughter and Leslie (1997; 2001) and Slaughter and Rhoads (2010), meets the North American particularity, however, due to the possibility of expanding the fields analytics of TCA, academic capitalism expands in a particular way depending on the national reality. In this sense, in Brazil, the TCA is based on the logic of the IPES performance and its direct articulation with financialization, considering that it is the logic of diversifying the maintenance sources that act in the State-IPES relationship, thus consolidating, a true educational entrepreneurship that is directly linked to academic capitalism as a result of the globalization of capital.

IV. BRAZILIAN ACADEMIC CAPITALISM AND THE PRIORITIZATION OF STRATEGIC COURSES/RAW MATERIAL KNOWLEDGE FOR THE LOCAL ECONOMY

Brazilian academic capitalism experiences a private-commercial expansion with such intensity and complexity that it is crucial to undertake an analysis of the totality of the elements that constitute the market networks that enable the extraction of profits. Certainly, the way academic capitalism was organized in Brazil incorporated the guidelines of international organizations regarding the areas that should be treated as priorities. As a result of the local capitalist market, the so-called physical sciences and engineering - in addition to other areas of training that also fit into the profile of professional entrepreneurship - fit into the academic bachelor's degree, the IPES then give priority to the offer of this type of courses, whereas, for example, undergraduate courses are now subordinated to this logic of supply.

It is worth adding to this context of financial and commodity-education predominance the expansion of Higher Technology Courses (CST), which was supplemented by the Law of Guidelines and Bases (Law No. 9,393/96) in addition to meeting market demands, as well as guidelines of international organizations (SOUSA, 2016). The conception that guides professional and technological education seeks to propose an education model that is not limited only to the logic of professional qualification, but manages to obtain the skills necessary for the world of work. Now, raw material knowledge corresponds to the logic of technology and innovation.

Pursuant to the National Education Guidelines and Bases Law, Art. 39. Professional and technological education, in the fulfillment of the objects of national education, is integrated to the different levels and modalities of education and to the dimensions of work, science and technology. § 1 The professional and technological education courses may be organized by technological axes, enabling the construction of different training itineraries, in compliance with the norms of the respective system and level of education. § 2 Professional and technological education will cover the following courses: I – initial and continuing education or professional qualification; II – high school technical professional education; III – undergraduate and graduate technological professional education. (BRAZIL, 1996).

The expansion of these courses is based on the neoliberal conception in which social and, therefore, educational policies oppose marketing

precepts. In this way, business groups advocate policies apologetic to the private-commercial sector, prioritizing targeting at the expense of universalist bases. In addition, in Brazil, CSTs are characterized as short-term undergraduate courses, however, this is not a peculiar Brazilian phenomenon. In other national states, the logic of short courses that include professional and technological education is already being developed.

The scenario of undergraduate courses in Brazilian higher education has its particularities, depending on its academic degree. In this sense, it is necessary to perform a quantitative analysis of undergraduate courses, as it makes it possible to verify the rate of growth and reduction. For this purpose, table 3 examines the bachelor's, licentiate and technological courses both in the classroom and distance courses.

Table 3: Evolution of the Number of Undergraduate Courses by Type of Teaching, according to Academic Degree – Brazil – 2014-2016

Year	Academic Degree	Total	Teaching Mode	
			Presential	The Distance
2014	Total	32.878	31.513	1.365
	Bachelor degree	18.609	18.319	290
	Licentiate	7.856	7.261	595
	Technological	6.413	5.933	480
2015	Total	33.501	32.028	1.473
	Bachelor degree	19.254	18.938	316
	Licentiate	7.629	7.004	625
	Technological	6.618	6.086	532
2016	Total	34.366	32.704	1.662
	Bachelor degree	20.182	19.759	387
	Licentiate	7.356	6.693	663
	Technological	6.828	6.216	612

Source: INEP (2017; 2016)

It appears that, in the period under analysis, the bachelor's degree courses had an increase in their offer of 8.45%. Regarding the percentage of its offer compared to the offer of all courses, the offer of bachelor's degree courses corresponds to 57.61% of the total courses in Brazilian higher education. Of this amount, 98.29% deals with the face-to-face offer, while distance education represented only 1.71% of the bachelor's degree offer. Undergraduate degrees had a reduction of 6.36% in the offer of their courses. Of the overall total, they represent 22.67% of the offer of undergraduate courses, with 91.75% referring to the on-site offer and 8.25% to distance learning. The CST, in turn, account for 19.71% of the offer of courses. The on-site modality represents 91.82% of its offer, with EaD expressing 8.18% of the offer of technological courses.

In summary, it is clear that, among the undergraduate courses, according to the academic degree, only undergraduate courses had a reduction in their on-site offer (-7.82%), on the other hand, their offer in distance education had a relative growth of 11 .43%. In general terms, the bachelor's and technological courses had exponential growth compared to the licensures. This scenario indicates the logic of the subordination of teacher training courses. We emphasize that this scenario portrays the entire Brazilian higher education system, that is, public HEIs and IPES.

Despite this quantitative scenario of offering undergraduate courses, it is necessary, in addition, to analyze student enrollment rates so that more data can be obtained to corroborate the argument in question.

Table 4: Evolution of the Number of Undergraduate Enrollments by Type of Teaching, according to Academic Grade – Brazil – 2014-2016

Year	Academic Degree	Total	Teaching Mode	
			Presential	the Distance
2014	Total	7.828.013	6.486.171	1.341.842
	Bachelor degree	5.309.414	4.892.907	416.507
	Licentiate	1.466.635	925.942	540.693
	Technological	1.029.767	645.125	384.642
2015	Total	8.027.297	6.633.545	1.393.752
	Bachelor degree	5.516.151	5.080.073	436.078
	Licentiate	1.471.930	906.930	565.000
	Technological	1.010.142	617.468	392.674
2016	Total	8.048.701	6.554.283	1.494.418
	Bachelor degree	5.549.736	5.083.946	465.790
	Licentiate	1.520.494	880.167	640.327
	Technological	946.229	557.928	388.301

Source: INEP (2017; 2016)

We chose to use the table model similar to the previous one, which dealt with the number of courses, so that the analytical explanation of the data followed the same script. Thus, as shown in table 4, student enrollments in bachelor's degree courses represent 68.67% of total enrollments. In the on-site modality, 92.05% of enrollments are concentrated, while in EaD, the concentration is only 7.95% of enrollments. Licentiate courses represent 18.72% of enrollments. In face-to-face, there are 60.84% of enrollments, in EaD, 39.16. Finally, technological courses represent 12.54% of enrollments, with 60.97% being enrolled in the on-site modality and 39.03% in the distance learning modality.

Still, enrollment in bachelor's degree courses grew, in the on-site modality, by 3.90%, and, in EaD, by 11.83%. In undergraduate courses, there was a reduction in on-site enrollment (-4.94%), while in EaD, there was an increase of 18.43%. Technological courses had a reduction of 13.52% in face-to-face enrollment and a small growth of 0.95% in enrollment in EaD.

This scenario of reduction of on-site enrollments in licenciatura/teacher training courses corresponds to the movement of capital to emphasize hard areas. In addition, from the advertisement for the dissemination of bachelor's degrees, which, as a consequence, in the IPES, have tuition fees - according to the value corresponding to the educational credit - high in relation to degrees, it highlights the logic of employability and the liberal professional based on the entrepreneurial rationality that these courses make possible. Furthermore, the very dissemination of professional fields, bachelor's degree courses gain emphasis in comparison with other courses, especially as a result of entrepreneurs who need education-goods.

In these circumstances, it was possible to verify that the number of student enrollments in higher education – according to academic degree – shows a growth of around 29.67%. However, when we started to analyze the enrollments for each academic degree, once again, the bachelor's degree courses soared ahead with an increase

relative to 33.97% of enrollments, the CST had a relative growth of 27.85%.

With the expansive movement of courses in the last seven years, it is fair to reiterate that this is not an isolated phenomenon, however, it is a broad and complex movement that is particular to the mosaic of Brazilian academic capitalism. Based on the data analysis, it is possible to see that the interest in profit hovers over the need for a solid and critical education that has reality as its gravitational axis. Indeed, it seems to us that the logic of utilitarian knowledge suggested by international organizations is gaining importance, with the growing number of bachelor's and technological courses, both on-site and in EaD.

The Humboldtian model was secondary. In the current scenario of financial predominance of capital, its legitimacy is replaced by "market legitimacy, as the value of knowledge is increasingly measured by quantifiable criteria and impacts, according to the very logic of profit, instrumental utility and business competitiveness" (Afonso, 2015, p. 275-276).

The priority areas for IPES depend on a type of knowledge, the aforementioned author considers that

> [...] when we ask ourselves what the nature of this other knowledge is, the answer is obvious: it is not any knowledge [...], even though it may be relevant knowledge. But it is also not about the scientific knowledge produced as a result of the exercise of academic freedom, the autonomy of the researcher and research centers, and which knows how to prove its relevance regardless of whether it is fundamental or applied, originating in exact or natural sciences, or in the social sciences and humanities. Rather, it is the scientific and technical knowledge that enables processes of comparative and competitive affirmation, and that allows its appropriation within an increasingly commercialized and profitable rationality. (Afonso, 2015, p. 277).

Certainly, it is a necessary knowledge for Brazilian academic capitalism and not knowledge that has an emancipatory purpose. The principles of the capitalist market, when inserted in higher education, have their rationality metamorphosed, their modus operandi is affected by these principles; and business models start to gain decisive weight, even conditioning the offer of courses that should be prioritized.

The scenario of the commodification of Brazilian higher education gains a new element with the launch, in July 2019, of the Entrepreneurial and Innovative Institutes and Universities Program (FUTURE-SE). This program seeks to establish partnerships between Federal Institutions of Higher Education (IFES) and Social Organizations (OS), in addition to promoting fundraising in the market to strengthen the administrative and financial autonomy of the IFES. The program is systematized in three axes: 1) management, governance and entrepreneurship; 2) research and innovation; and 3) internationalization. This panorama engenders implications for the structuring and enhancement of Brazilian academic capitalism, however, now wanting to mold the Brazilian IFES to the framework of the World Class University, since the New American University is its main reference (DE PAULA; COSTA; LIMA; 2020).

FUTURE-SE understands that overcoming the fragility of innovation, as well as patent registrations in Brazil, will be carried out through individual and private incentives to teachers and students, increasing private funding for research projects, as well as to boost Research & Development (R&D). Academic capitalism expands in a particular way depending on the national reality. In this sense, in Brazil, the most expressive form of academic capitalism occurs through the logic of the performance of the IPES and its direct articulation with fictitious capital. At the limit, academic capitalism is a sector constituted by functional forms of capital, the FUTURE-SE, strictly speaking, denotes paths for dismantling the IFES and encouraging the commodification of scientific production.

V. THE METAMORPHOSIS RESULTING FROM THE PANDEMIC AND INCONCLUSIVE CONSIDERATIONS

The World Health Organization (WHO) issued a global disease alert on December 31, 2019. The disease was officially named by WHO as Covid-19 on February 11th. In March, the organization defined the outbreak of the disease as a pandemic. The nature and scale of the Covid-19 crisis is unprecedented in the century. Its impacts are felt in all aspects of life. The education sector on a global scale was directly affected by the pandemic. For example, many national states have prevented the virus from spreading by closing educational institutions. Despite this scenario implying obstacles in university education, another aspect emerged from all this, the emergence of digital learning through remote learning and the consequent role of educational technology companies (EdTech).

The reconfiguration of training processes through technological packages during the pandemic period enabled new forms of private-mercantile expansion of academic capitalism, in effect, resulting in the deepening and consolidation of an existing learning market, however, now complemented by Covid- 19.

Since the 1990s, multilateral agencies such as the WB, the World Trade Organization (WTO) and UNESCO have proposed Distance Education (EaD) to expand education in countries with dependent capitalism. Despite the rhetoric of anguish about the educational situation resulting from social isolation, defending the interests of educational companies and Information and Communication Technologies (ICTs) is the order of the day. The implementation of hybrid education, with synchronous classes, competency-based teaching, traditional study plans and memorization exercises to meet large-scale assessments (GIROUX, 2018), highlights the need to pay special attention to online assessments, such as o proposal for the digital National Secondary Education Examination (ENEM).

The Colemarx document (2020, p. 13) points out that there is a global coalition involving business sectors and governments, and that this coalition is led by UNESCO and involves other multilateral agencies, in addition to business groups such as "Microsoft, Google, Facebook, Zoom, Moodel, Huawei, Tony Blair Institute for Global Change, Fundación Telefónica and others". The most used resources in the educational landscape during pandemics come from this coalition: "Google, Google classroom, Google suite, Google Hangout, Google Meet, Facebook, Microsoft one note, Microsoft, Google Drive / Microsoft Teams, Moodel, Zoom, Youtube".

The centralized use of these resources expresses the interests of the education market, since the financialization of education is deepened by the purchase of packages from educational technology companies (EdTechs) by the public sector. According to Moeller (2020, p. 3), EdThechs have software aimed at developing skills and abilities in a given knowledge – in the past, emphasis was placed on basic education, however, with the global pandemic collapse, higher education becomes part of of this scenario and to characterize yet another niche of academic capitalism –. In addition, these software enable "significant changes in the operation and management of education units", including the "contracting of specific services or entire institutions". This scenario was already operated in the US through Educational Management Organizations (EMOs) with the aim of developing and/or administering educational institutions. Examples of EMOs that best characterize this scenario are: Edison Learning Inc., which runs autonomous public schools, and Electronic Classroom of Tomorrow, which was created as an online school. In addition, there are EdThechs, such as Pearson, which sell educational packages such as curricula, pedagogical programs, assessment services and professional development, although they are for-profit companies, they are financed by the public sector through financial operations (Koyama, 2010).

The British multinational Pearson seeks in the education sector to lead the next generation of teaching and learning, developing digital learning platforms, including artificial intelligence in education (AIED). It is testing new AIEd

technologies that it hopes will enable virtual tutors to deliver personalized learning to students, such as Siri or Alexa. Furthermore, in the published document Pearson 2025 emphasizes that the corporation's mission by 2025 is to promote "the benefits of technological developments and their combination with new types of teaching professionalism. However, its corporate strategy is premised on creating disruptive changes to (a) the teaching profession, (b) the provision of curriculum and assessment, and (c) the role of schools, particularly public education.These interruptions do not follow a coherent set of educational principles, but capriciously serve the interests of the company's shareholders. (Sellar & Hogan, 2019, p. 1).

It is fair to point out that EdThechs constitute a multibillion-dollar corporate field, and corporate actors such as Google, Microsoft and Apple are at the epicenter. Moeller (2020, p. 6) states that "Google, Microsoft and Apple are fighting for dominance in the classroom. Everyone wants their devices to be in the hands of the next generation of consumers. "It's a valuable marketing niche to master. Strictly speaking, as a company, EdThechs, in 2019, reached the value of US$ 43 billion, with approximately half of that amount in basic education.

In fact,

> [...] there is a corporation whose whole business is education. This includes educational technology companies (EdTech) whose business is education, such as DreamBox, an online math software. There are also significant changes taking place in the operation and management of schools, which have led to the hiring of specific services or entire schools (Burch & Good, 2014; Fabricant & Fine, 2012; Koyama, 2010; Saltman, 2005). Scholars have demonstrated how this occurs in the United States through for-profit educational management organizations (EMOs) that develop and/or manage schools (Levin, 2001). Examples include EMOs like Edison Learning, Inc., which runs public licensed schools and the Electronic Classroom of Tomorrow, which was a licensed online school, the largest in Ohio until it closed in 2018 after legal challenges with the Ohio Department of Education . Charter management organizations (CMOs), such as Summit Public Schools or KIPP Schools, similarly operate public school networks, but are distinguished by being non-profit entities rather than for-profit entities, although they often generate revenue and partner with for-profit institutions. In international contexts, there is also a proliferation of for-profit companies such as Bridge International Academies, Omega, Rising Academies and Affordable Private Education Centers operating low-rate for-profit schools in countries such as Kenya, Liberia, Ghana, Nigeria, Uganda, Philippines and India, often through contracts with Ministries of Education. (Moeller, 2020, p. 9).

If we look at the movement of shares from April 15 to May 14, 2020 on the São Paulo Stock Exchange (BOVESPA), it is possible to observe the fall in shares of the two largest S/A holding companies in the education sector, Cogna Educacional (COGN3 -24.18%) and YDUQS (YDUQ3 -20.52%), however, three of the companies that provided educational resources to operate distance education in the pandemic period had their shares appreciated, according to the NASDAQ index, the Zoom companies Video Comunication (ZM 10.79%), Alphabet Inc. (GOOGL 7.92%) and Microsoft (MSFT 5.03%) express this capital appreciation.

In this sense, there is a scenario of continuity in the deepening of the financialization of education, however, shifting the emphasis from transactions, that is, previously concentrated on institutions, began to emphasize technological resources. This phenomenon results from serious implications for the formation of subjects, pedagogical work and access to and permanence in education. Teaching migrated from classrooms to videoconferencing applications. Indeed, Brazilian academic capitalism incorporates these metamorphoses that demonstrate, once again, its capacity to adapt to market transformations.

Finally, this article presented some elements that condition the modus operandi of Brazilian higher

education from the phenomenon of globalization that takes place via the globalization of predominantly financial capital. The program of innovative and enterprising universities and institutes expresses the search to reconcile the Brazilian model of higher education with the North American one, however, several elements are not considered since the dependent Brazilian particularity differs by leaps and bounds from the US reality. Idealizing a similar scenario without investment in public universities and in quality training will make it impossible to carry out research in public universities.

In addition, the entrepreneurship of knowledge production will imply the loss of the public role of scientific research, as well as the incorporation of the entrepreneurial role of the professor, as he will have to seek private resources to finance his research, as well as the sale of products resulting from them. However, for the effective development, with excellence, of scientific research, structure, up-to-date software and basic materials are needed to guarantee the researcher's work. It is fair to emphasize that, on a global scale, the resources generated by the IFES themselves have a complementary purpose. Now, the R&D activities, training, are maintained by the State, even the universities that occupy the top of the international rankings depend on public resources to maintain themselves. In this sense, the discourse of the valuable "private investment" is contradictory, that is, public resources continue to be the main source of maintenance of higher education in a global school.

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