Gestalt Language Processing and Natural Language Acquisition webinar

A Critical Appraisal of the Evidence in a Systematic and Meta-Narrative Review of the Literature and Implications for clinicians

02 October 2025

SHIELD:

Science Highlights, Information and Evidence on Language Development

Gestalt Language Processing and Natural Language Acquisition: Clinical Implications of the Evidence in a Systematic and Meta-Narrative Review of the Literature

Webinar for RCSLT the Royal College of Speech and Language Therapists

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Dr Lucy Bryant

The University of
Technology Sydney

2nd October 2025

UTS

NOT TO BE USED FOR A COMMERCIAL PURPOSE

Acknowledgements & Declaration

- We thank and acknowledge the work of the Royal College of Speech and Language Therapists for hosting this webinar.
- The authors have received no funding for the study or for delivery of any workshops explaining its outcomes.
- The authors **declare no financial or other interest in the GLP/NLA** materials and do not implement GLP/NLA type interventions.
- The authors also have no financial interest in any behavioural or other AAC interventions.
- The **systematic review** authorship team includes 2 parents of 2 individuals diagnosed as autistic in childhood, 5 speech pathologists, 1 clinical psychologist, and 1 linguist.

Thank you for coming to our talk.

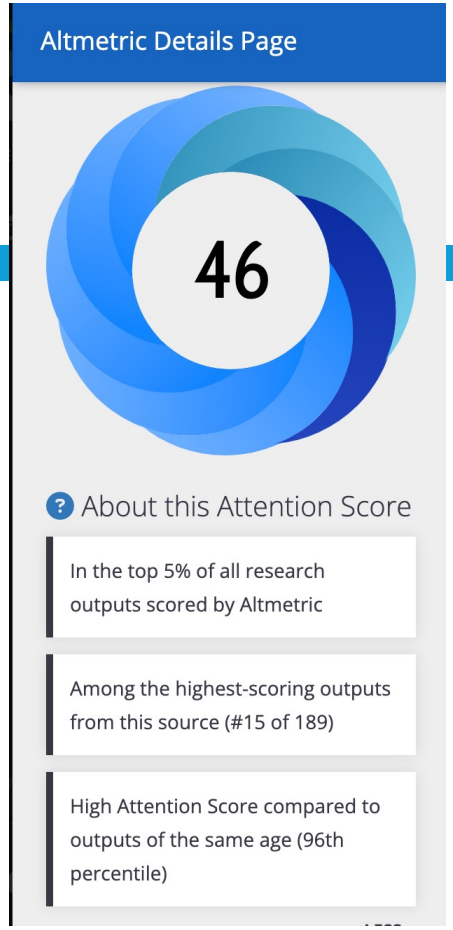
Pic: Global Symbols

Strong engagement with, and impact of our systematic review since December 2024

- RCSLT Podcast is coming! October 2025
- SPA Podcast released https://soundcloud.com/speechpathologyaustralia/implications-of-a-systematic-review-into-glp-s6e44
- DLD Podcast released https://thedldproject.com/gestalt-language-processing/
- UTS Speech Pathology 'What's got us talking' episode https://omny.fm/shows/whats-got-us-talking-the-uts-speech-pathology-pod/mind-the-evidence-gap-caution-over-gestalt-languag
- ASHA Evidence Maps https://apps.asha.org/EvidenceMaps/Articles/ArticleSummary/f9ec13fc-a1b9-ef11-8155-005056834e2b (highest rating of quality possible for an empty review)
- ASHA Practice Portal – autism https://www.asha.org/practice-portal/clinical-topics/autism/#collapse_6
- Over 15 free webinars globally with a total of over 4000 people attending – at no cost

Dissemination of research is an ethical responsibility of researchers

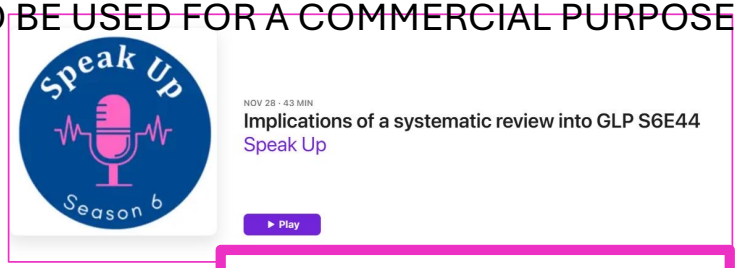
Systematic review of GLP/NLA open access



https://link.springer.com/article/10.1007/s40474-024-00312-z

Podcast listening

- Bronwyn.Hemsley@uts.edu.au
- University of Technology Sydney



Find it on Soundcloud, Apple Podcast etc

https://soundcloud.com/speechpathologyaustralia/implications-of-a-systematic-review-into-glp-s6e44

https://thedldproject.com/gestalt-language-processing/

https://omny.fm/shows/whats-got-us-talking-the-uts-speech-pathology-pod/mind-the-evidence-gap-caution-over-gestalt-languag

Learning goals

Why are we here?

By the end of the seminar, you will be able to …

- explain the rationale, method, and outcomes of the review
- explain the findings of the systematic review to a colleague or parent
- know how this piece of evidence fits into **research evidence**
- identify limitations in the review
- know the clinical implications of the systematic review
- contribute to your team discussions taking the research evidence or lack of evidence into account
- explain the meta-narrative review that is underway
- identify areas for future research investigating the effectiveness of GLP/NLA type approaches

Where does a systematic review fit?

- It is a form of scientific evidence
- Follows a formal, pre-determined method
- Is one way to determine the outcome of an intervention across multiple individual studies
- It is only one part of a much larger body of knowledge

Replication

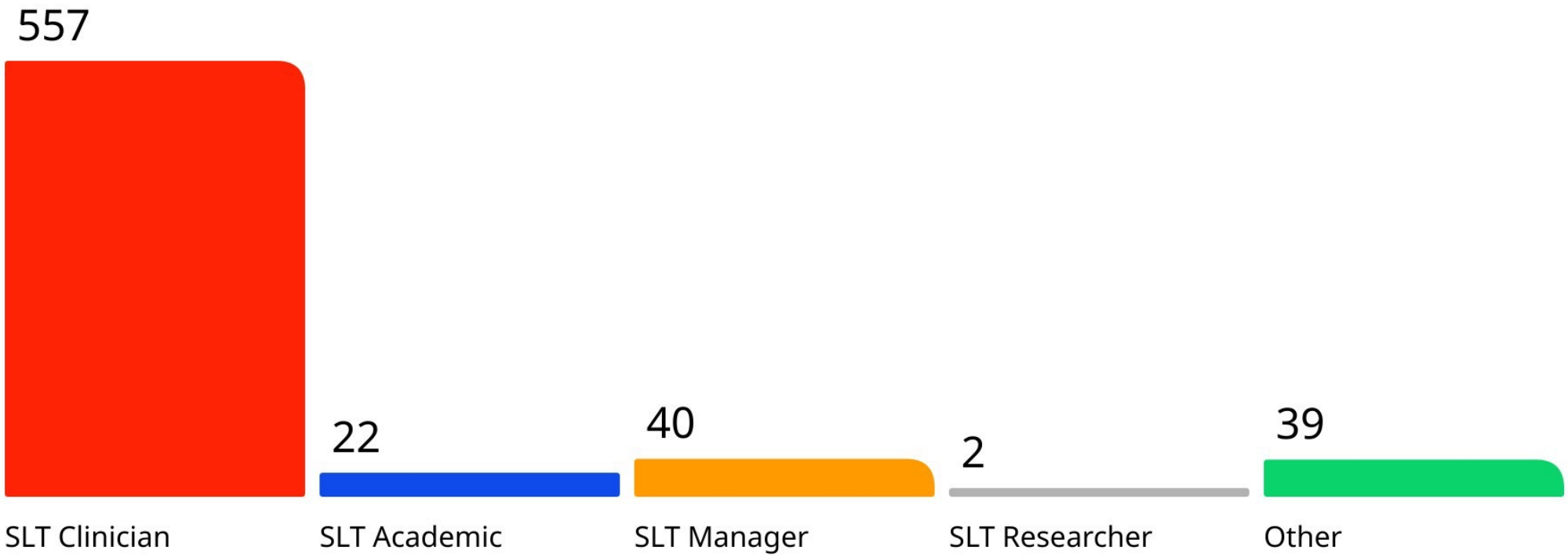
There are many legitimate types of evidence (our review fits into a larger body of knowledge) …

- Personal observations / clinician observations
- Testimony of observers (third party accounts)
- Stories of experience / narratives
- Photos, videos, poems, creative works
- Quantitative research
- Qualitative research
- Mixed methods research
- Systematic reviews and meta-analyses
- Legal cases
- Newspaper/media reports by journalists

Our audience wants to hear this

Welcome! What is your role?

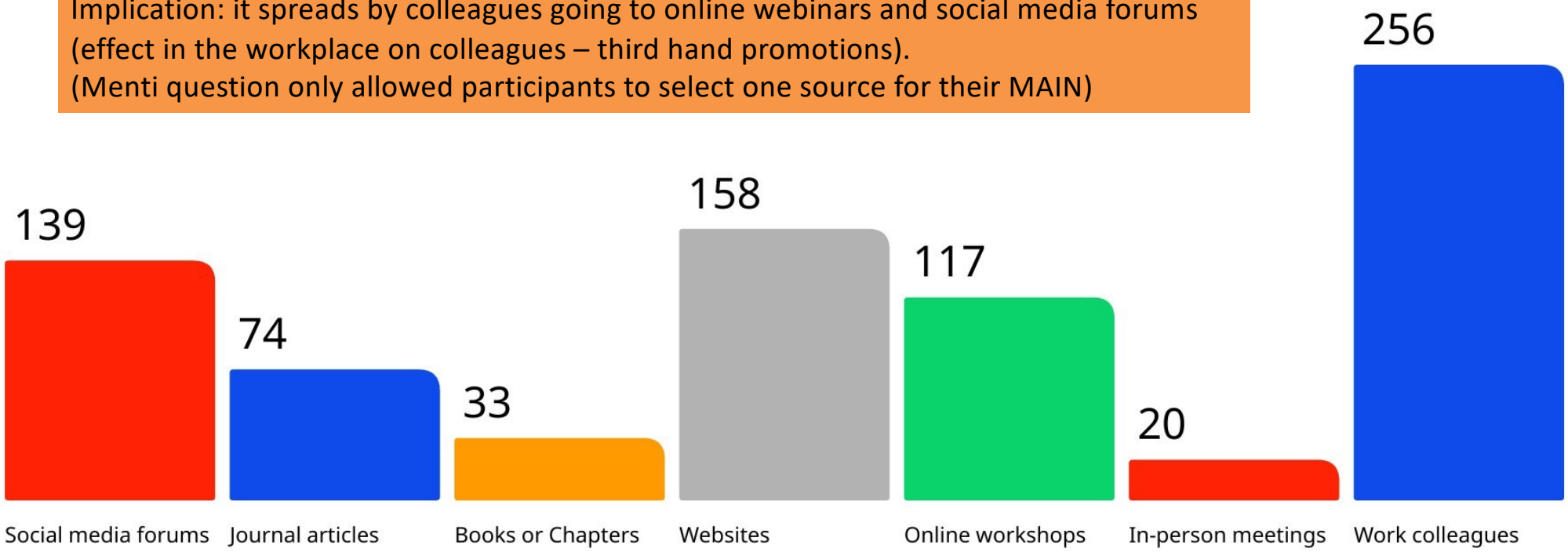
Results of the MENTI interactive poll



47 636

What are your main sources of information on GLP/NLA?

Implication: it spreads by colleagues going to online webinars and social media forums (effect in the workplace on colleagues – third hand promotions).
(Menti question only allowed participants to select one source for their MAIN)



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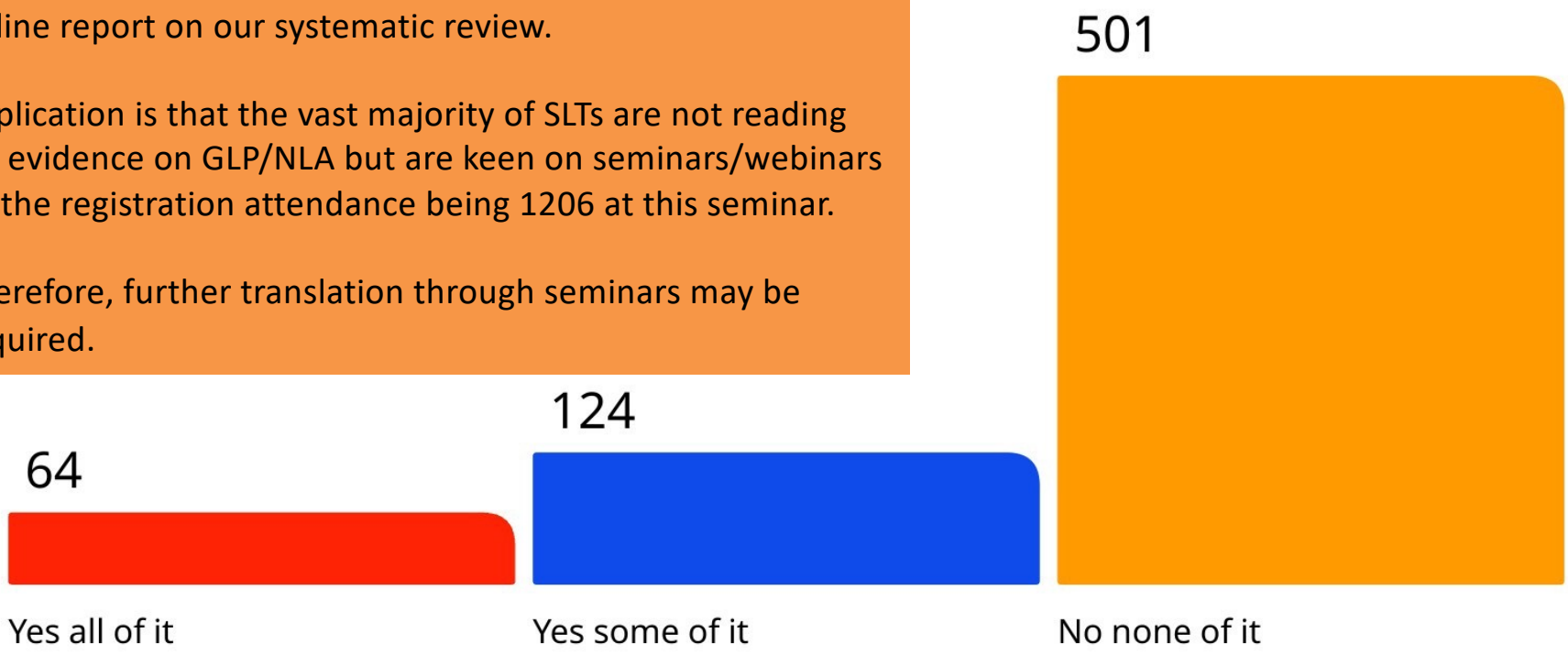
Have you read our Systematic Review journal article?

Under 10% responding to the Menti have read the free online report on our systematic review.

Implication is that the vast majority of SLTs are not reading for evidence on GLP/NLA but are keen on seminars/webinars by the registration attendance being 1206 at this seminar.

Therefore, further translation through seminars may be required.



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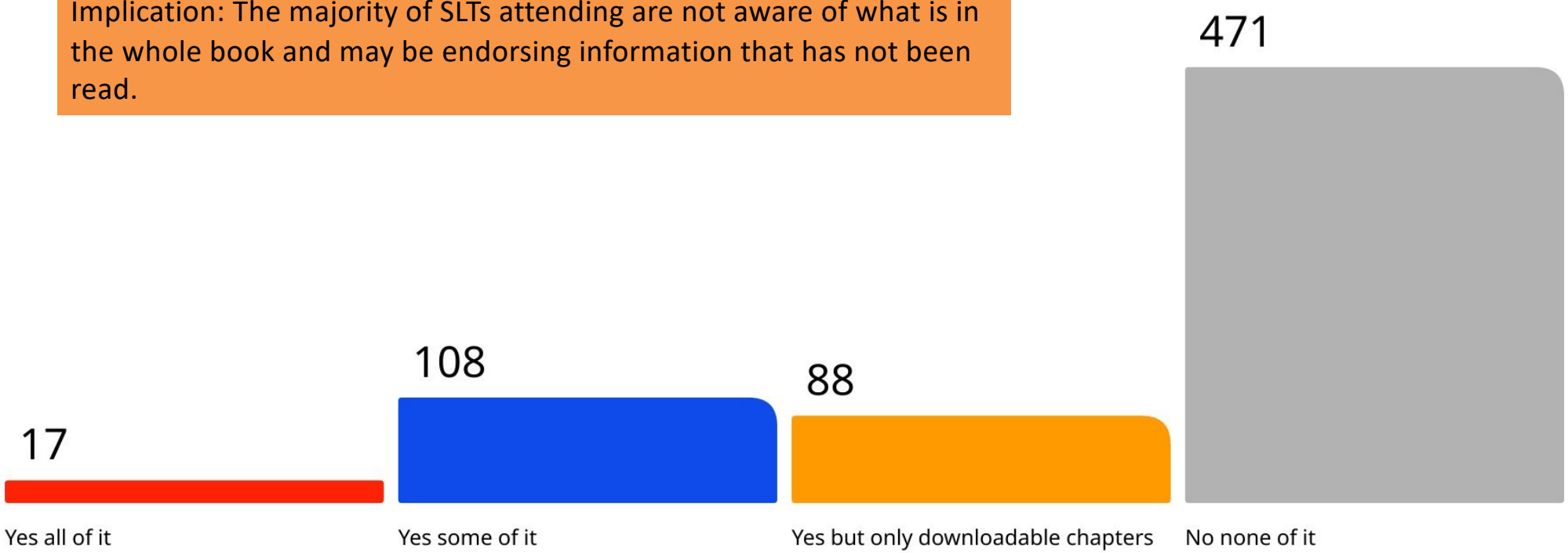
Have you read the Marge Blanc text of 2012 (Book hard copy)

Implication: The majority of SLTs attending are not aware of what is in the whole book and may be endorsing information that has not been read.



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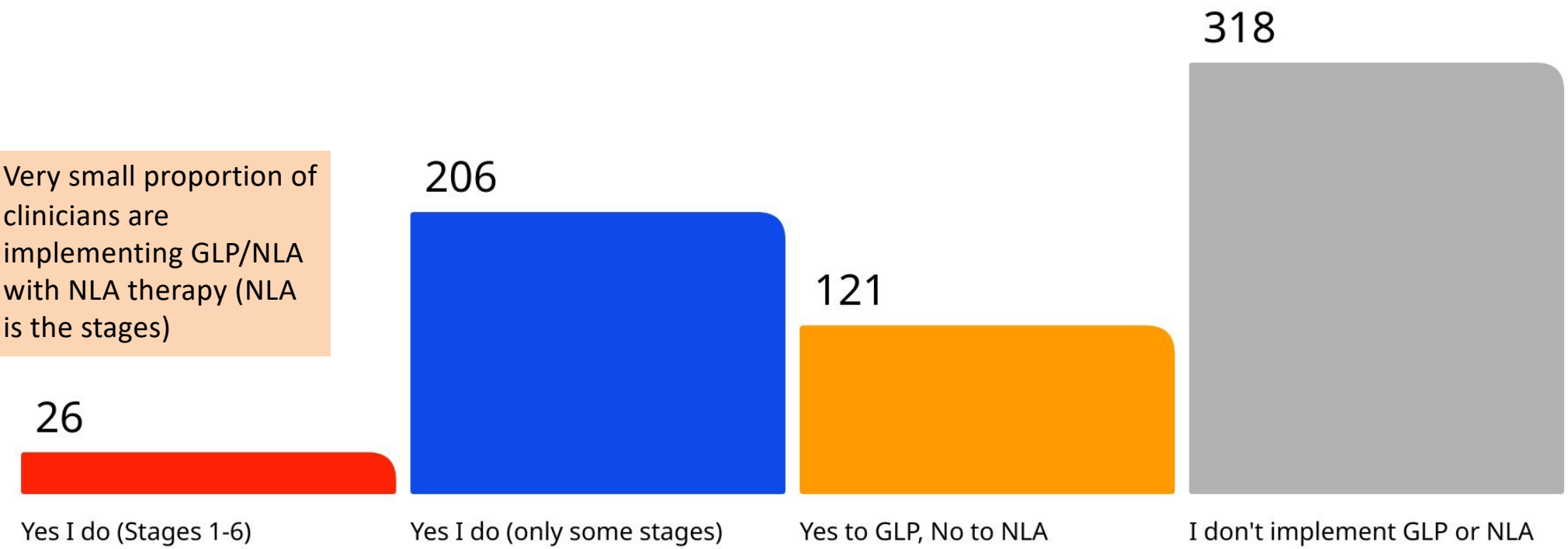
Do you implement the NLA 6 Stages?

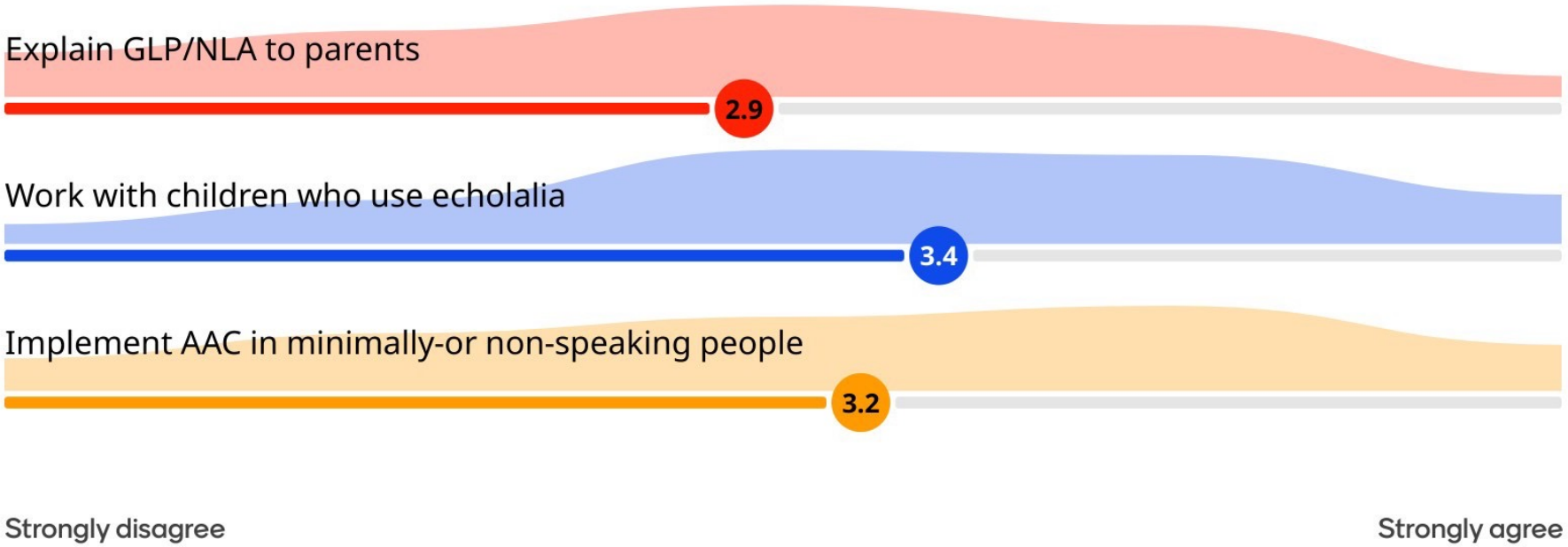
Implication: People are saying that GLP/NLA works when they are not implementing NLA

Very small proportion of clinicians are implementing GLP/NLA with NLA therapy (NLA is the stages)



Implication: Clinicians need more support in working with children who use echolalia and in working in AAC with this group of children

How confident are you to



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Part I. Background to the Systematic Review

Rationale and Prior Literature

Neurodiversity-affirming practice

- The desire for neuro-diversity affirming and responsive services is increasing in the field of speech & language therapy [1].
- Differences between neurodivergent individuals and neurotypical people do not represent a ‘disorder’ that needs to be ‘fixed’. Differences are valued as part of each person’s own interests, personality, preferences, and identity [1].
- Clinicians should adopt a strengths-based approach. All approaches used should acknowledge the person’s skills, capabilities, strengths and preferences. Presuming competence should not require assuming the person does not have receptive language or auditory comprehension support needs.
- A recent systematic review on echolalia [2] urges clinicians to recognise the communication functions of echolalia **rather than implement interventions designed to reduce echolalia.**

[1] Gaddy C, Crow H. A primer on neurodiversity-affirming speech language services for autistic individuals. Perspectives of the ASHA Special Interest Groups. 2023;8(6):1220-37.
[2] Blackburn C, Tueres M, Sandanayake N, Roberts J, Sutherland R. A systematic review of interventions for echolalia in autistic children. International Journal of Language & Communication Disorders. 2023;58(6):1977-93. https://doi.org/10.1111/1460-6984.12931

Rationale for the Review

1. GLP/NLA is considered controversial in the literature, and under-researched.

- There is controversy in the literature (differences of opinion) including concerns about the evidence base.
- This could leave clinicians unsure about the research on GLP/NLA type approaches.

2. GLP/NLA type approaches are rapidly moving from popular to common practice

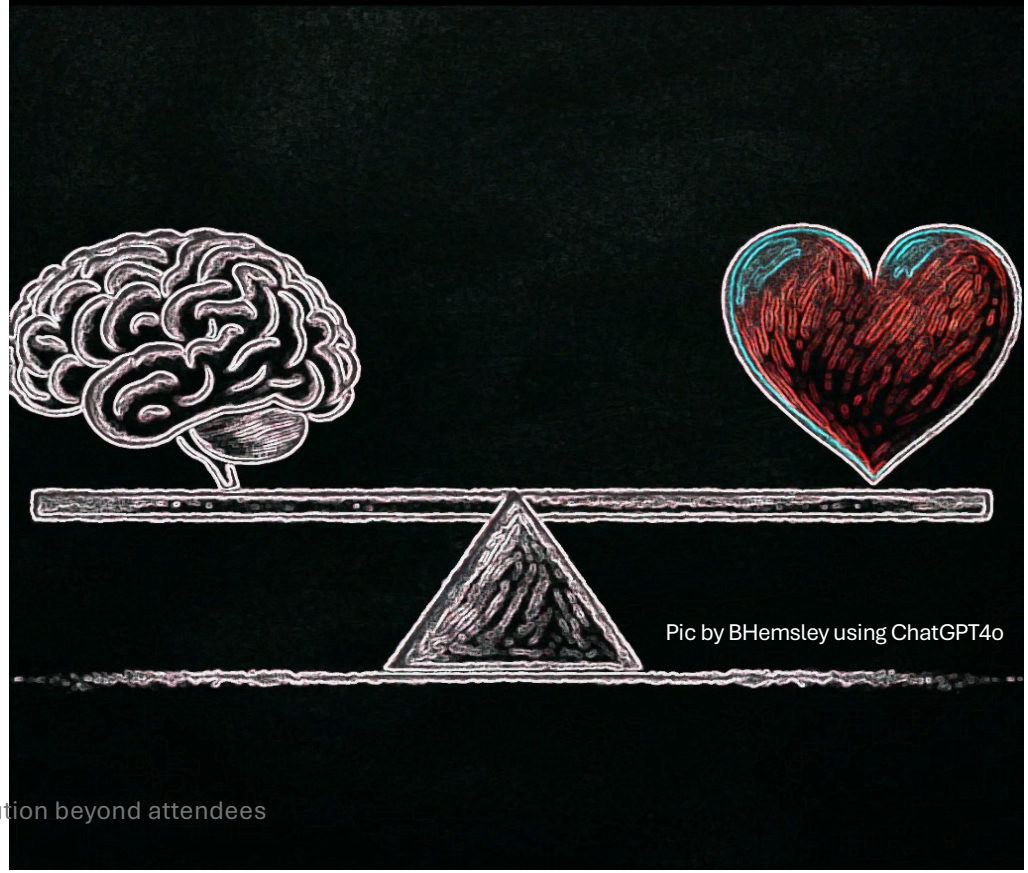
If delivered by SLTs, this is costing families and funding bodies money, and costing children and parents therapy time. It should be effective.

Therefore, is important to examine its evidence-base and any known or potential outcomes (benefits and harms).

A systematic review is appropriate considering the widespread claims of it being based on years of research and being of benefit to many.

A systematic review was designed to identify any studies that may or may not have been published and available in the peer-reviewed literature.

This was done to **provide clinicians, families, and funding bodies with information** that helps them in balancing their decisions and keep evidence-informed.

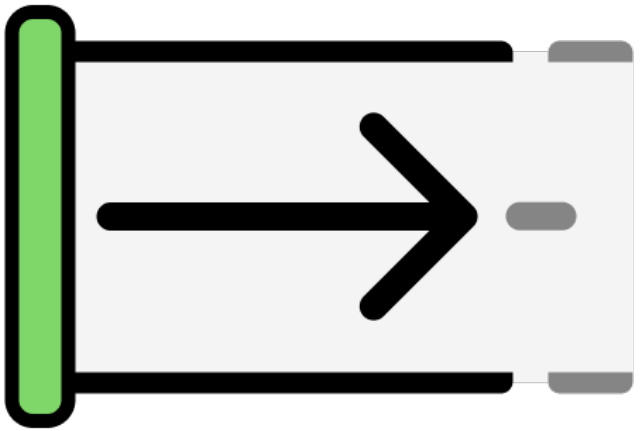


Where did it all begin?

- In 1977, Ann Peters referred to **gestalt and analytic types of language processing** to describe the language of one child who reportedly used both single words and longer units of language [1,2].
- Peters [2] acknowledged that evidence would be needed before any conclusions or applications would be appropriate, stating:

“I have been able only to sketch the outlines of a theory of early language acquisition, while leaving large patches of it unexplored.

This being the case, it is inappropriate to offer any formal "conclusion": We are only at the outset of a newly defined course of exploration.”



[1] Peters AM. Language learning strategies: Does the whole equal the sum of the parts? . Language. 1977;53(3):560-73.
[2] Peters AM. The units of language acquisition. Cambridge: Cambridge University Press; 1983.

Pic by Bhemsley using ChatGPT4o

5 years later … Prizant 1982, 1983

- Prizant [1] discussed the **production of multi-word 'chunks' of language in people with autism that were "unanalyzed"** (p.19) or **produced without awareness of the component characteristics** and **used the term "gestalt processing"** highlighting similarities with echolalia, particularly delayed echolalia.
- Prizant [2] suggested that "**delayed echolalia pattern may be manifestations of gestalt processing at both the situational and linguistic level**" (p. 302) and that autistic people may present with "an extreme style of gestalt processing" (p. 303). He also proposed a theory of **gestalt language acquisition** [3].
- Prizant (1982,1983) proposed **four stages of gestalt language acquisition**, cautioning that, "the notion of stages of language acquisition is presented for convenience of presentation; **no claims are made as to their psychological reality"** [2, p.303].

"… to fully understand how processing styles affect the acquisition and use of language, **detailed longitudinal research needs to be undertaken following children from prelinguistic stages through the acquisition of complex and spontaneous language"** [Prizant, 1983, p.305].

[1] Prizant BM. Gestalt language and gestalt processing in autism. Topics in language Disorders. 1982;3(1):16-23.
[2] Prizant BM. Language acquisition and communicative behavior in autism: Toward an understanding of the" whole" of it. Journal of Speech and Hearing Disorders. 1983;48(3):296-307.
[3] Baltaxe CAM, Simmons JQI. (1981) Disorders of language in childhood psychosis: Current concepts and approaches. In: Darby JK, Editor. *Speech evaluation in psychiatry*. New Yowk, NY: Grune & Stratton; 1981. p. 285-328.

Marge Blanc (2012) and GLP/NLA

Three decades after Prizant, Marge Blanc published a book *'Natural Language Acquisition on the Autism Spectrum: The Journey from Echolalia to Self-Generated Language'* [1], with an Addendum on Chapter 19 now available, presenting what she considered a new description of **natural** language acquisition, and citing the earlier work of Peters and Prizant among others.

Blanc [1] proposed, based first on her clinical experience at a University student clinic, that autistic children who exhibited delayed echolalia could be classified as GLPs, communicating in one of six stages: from 'gestalts' or chunks of language (either immediate echolalia or delayed echolalia), to 'mitigated gestalts' (i.e., split up into parts), and to new phrases and generative language using a wide range of words and grammar.

Despite cautions from Peters that her assumptions were theoretical in nature, early in development, and not seen as conclusive, Blanc (2012) described the "enormous contribution" that Peters' findings had made to her conceptualization of GLP and NLA.

Blanc proposed that **six stages represent a developmental process of "Natural Language Acquisition"** [1,2] and included a protocol for clinicians and parents to follow in therapy for autistic children identified as GLPs focused on:

- whole gestalts (Stage 1)
- mitigated phrases (Stage 2)
- isolated words (Stage 3)
- development of grammar from beginner (Stage 4)
- advanced (Stage 5)
- complex grammar in spontaneously generated language (Stage 6)

[1] Blanc M. Natural language acquisition on the autism spectrum: The journey from echolalia to self-generated language. Madison, WI: Communication Development Center; 2012.

[2] Blanc M, Blackwell A, Elias P. Using the natural language acquisition protocol to support gestalt language development. Perspectives of the ASHA Special Interest Groups. 2023;8(6):1279-86.

Where is the evidence for claims about % of children who use echolalia (taken as a measure for GLPs)?

Review of echolalia definitions and prevalence

Historically tracks back on

% estimates

Read it for free – it's Open Access

[1] Sutherland, R., Bryant, L., Dray, J., & Roberts, J. (2024). **Prevalence of Echolalia in Autism: A Rapid Review of Current Findings and a Journey Back to Historical Data.** *Current Developmental Disorders Reports.* *https://link.springer.com/article/10.1007/s40474-024-00311-0*

Echolalia

Blackburn (2023)
"75% of autistic individuals" (p.1978)
Cites van Santen et al., (2023)

Jaswal (2019)
"75% of autistic children" (p.6)
Cites Rutter, Greenfield & Lockyer (1967)

Lanzarini (2021)
"85% of 777 children with autism" (p.2)
Cites Mayes & Calhoun (2011)

McFayden (2022)
"75 – 100% of autistic children" (p.3)
Cites Mayes & Calhoun (2011), Roberts (2014), and Rutter, Greenfield & Lockyer (1967)

Shield (2017)
"up to 75% of verbal children with ASD, and 100% of children with ASD 37-54 months of age" (p.1622)
Cites Roberts (2014) and Rutter & Lockyer (1967)

Cohn (2021)
"up to 85% of all individuals with ASD who develop speech" (p.2)
Cites Rutter, Greenfield & Lockyer (1967) and Rydell & Prizant (1995)

Hutchins (2024)
"85% of autistic people" (p.2)
Stated in reference to Blanc (2012)

Xie (2023)
"shown in 75-80% of verbal individuals" with ASD (p.1)
*Cites four sources, one discusses prevalence – Prizant (1983a)

Gladfelter (2020)
"Over 75% of children with ASD" (p.327)
Cites Wing (1971)

Luyster (2022)
50% of "children on the autism spectrum who had 'functional' language" (p.5)
Cites Szatmari et al., (1995)

Shield (2014)
"24% of children who were deaf with ASD" (p.313)
Cites Jure et al., (1991)

van Santen (2013)
"75% of verbal children with ASD" (p.373)
Cites Rutter, Greenfield & Lockyer (1967)

Mayes & Calhoun (2014)
Primary Study: Parent interview, clinical observations
Sample: 777 children with autism
"Atypical, repetitive vocalizations or speech" (p.751) were identified in 86% (high functioning) to 92% (low functioning) pre-schoolers with autism, and 87% (high functioning) to 90% (low functioning) school-aged children with autism.

Roberts (2014)
Primary Study: Language assessment
Sample: 26 children with autism
Across three annual assessments, the proportion of autistic children "with significant amounts of echolalia" (p.64) was 100%, 89%, and 54%

Blanc (2012)
"at least 85% of the children w ith autism who acquire speech" (p.6)
Cites Rydell & Prizant (1997)

Rydell & Prizant (1995)
"at least 85% of the children w ith autism who acquire speech" (p.105)
Cites Prizant (1987)

Prizant (1987)
"in verbal autistic children ... at 75% or greater." (p.65)
Cites Baltaxe & Simmons (1981)

Baltaxe & Simmons (1981)
"75% of all autistic children who develop communicative speech" (p.301)
Cites Rutter (1974) and Ricks & Wing (1975)

Rutter (1974)
Echolalia noted as a characteristic of "language retardation", which is "present in all (or nearly all) autistic children". (p.148)
Cites Rutter (1966) and Rutter & Lockyer (1967)

Prizant (1983)
"75% of verbal autistic persons" (p.297)
*Cites three sources, one discusses prevalence – Prizant (1983b)

Prizant (1983)
"in verbal autistic children... at 75% or greater." (p.63)
Cites Baltaxe & Simmons (1981)

Ricks & Wing (1975)
Echolalia present in "at least three quarters of the speaking autistic children they studied" (p.206)
Cites Rutter (1965) and Wing (1971)

Szatmari et al., (1995)
Primary Study: Diagnostic Interview with Parent.
Sample: 47 children with autism
"of those with language, 50.0% demonstrated delayed echolalia" (p.1664). This equated to 15/30 children with language (31.9% of total sample).

Jure et al., (1991)
Primary Study: Medical Chart Review
Sample: 46 hearing-impaired children who "met the criteria for autism" (p.1063)
"Echolalia in sign was reported for five of the 21 signers" (p.1067). This equated to 10.9% of total sample.

Rutter (1965; 1966),
Rutter & Lockyer (1967)
Rutter, Greenfield & Lockyer (1967)
Studies report the same sample

Primary Study: Hospital Chart Review

Sample: 63 pre-pubescent children with "child psychosis, schizophrenic syndrome of childhood, infantile autism, or any synonyms of these" (p.53) admitted to the hospital between 1950-1958

Rutter (1965) "of the speaking children, three-quarters exhibited echolalia" (p.40)

Rutter (1966; p.56) and Rutter & Lockyer (1967, p.1173) 29 (46%) were identified as having echolalia

Rutter, Greenfield & Lockyer (1967) Follow-up of the same sample in 1963-1964
"of the children who gained useful speech, three-quarters were echolalic" (p.1189)
Echolalia noted as a "factor" for 23 (36.5%) in total sample (p.1194)

Wing (1971)
Primary Study: Parent Survey
Sample: 27 autistic children, 20 speaking.
80% (16) of the verbal children had "abnormal scores" on use of "meaningless echolalia" and 85% (17) on "purposeful use of echolalia".

A linguist's take on GLP/NLA

- "… most of the advice from Blanc [1–6], falls into three categories: **reasonable but unoriginal, too unclear to act upon, or ill-conceived and counterproductive**.

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https://link.springer.com/article/10.1007/s40474-024-00309-8

Beals, K. 2024 (A linguist's take on GLP/NLA, cont.)

"... most of the advice from Blanc [1–6], falls into three categories: **reasonable but unoriginal, too unclear to act upon, or ill-conceived and counterproductive**.

In the first category, **reasonable but unoriginal advice**, are directives like "narrate your day with your child", "say things in kid-friendly sentences that are animated and sound distinctive", "think about [your child's] communicative intentions, substitute new words and phrases into echoed phrases", or "respond to grammatical errors by recasting, and gradually increase in the complexity of what you model" [5].

Falling into the second category, **advice that is too unclear to act upon**, are the guidelines for moving a child from one proposed stage of NLA to another. ...

In the third category, **advice that is ill-conceived and counterproductive**, is the notion that, until children classified as "gestalt language processors" move beyond NLA Stages 1 and 2, therapists and parents should avoid single words and two-word combinations (at least at Stage 1). Another is that therapists and parents should avoid using verbs until after "gestalt language processors" get to NLA Stage 4 [3]. This means that the adult is using 'telegraphic' speech in the linguistic sense rather than using grammatical language.

A third is the exhortation to (emphasis is as provided in the cited document): **Protect** your child from **well-intended, but misguided** language practices that are commonly used with analytic language processors (ALPs) ...No single- word training; no questions; no prompting; no fill-in-the-blank [1].

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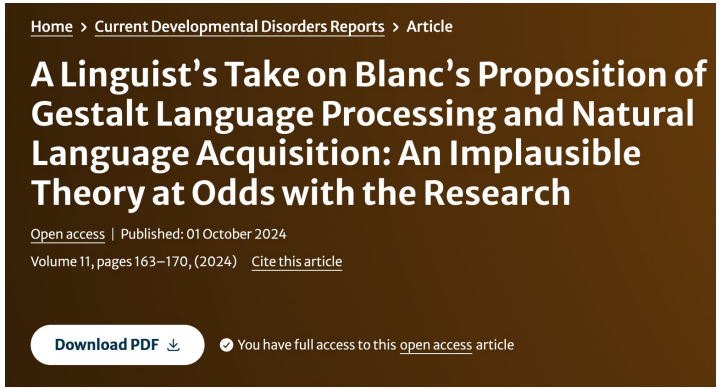


https://link.springer.com/article/10.1007/s40474-024-00309-8

What's *not* problematic about Blanc's advice? What's reasonable?

- Directives like
  - "narrate your day with your child"
  - "say things in kid-friendly sentences that are animated and sound distinctive"
  - "think about [your child's] communicative intentions, substitute new words and phrases into echoed phrases"
  - "respond to grammatical errors by recasting, and gradually increase in the complexity of what you model"

There are things that good SLPs (and parents) have been doing for decades.

What's problematic about Blanc's advice? What's ill conceived or counter productive?

- Learning basic nouns and verbs are key first steps in language learning, and this makes two elements of Blanc's advice problematic:
  1. That until children classified as "gestalt language processors" move beyond NLA Stages 1 or 2, therapists and parents should avoid single words and two-word combinations.
  2. That therapists and parents should avoid using verbs until after "gestalt language processors" get to NLA Stage 4 [3]. This means that the adult is using 'telegraphic' speech in the linguistic sense rather than using grammatical language.
- A third is the exhortation to (emphasis is as provided in the cited document): **Protect** your child from **well-intended, but misguided** language practices that are commonly used with analytic language processors (ALPs) …No single- word training; no questions; no prompting; no fill-in-the-blank [1].

Part 2. Aims Methods and Results

What did we do, and what did we find?

Aims of the Systematic Review

The aim of the systematic review was to determine answers to these 3 questions

1. Is the use of GLP/NLA-type interventions **effective** for individuals with communication disability in terms of **improving language skills**?
2. Is the use of GLP/NLA-type interventions **effective** for individuals with communication disability in terms of **improving communication skills**?
3. Is the use of GLP/NLA-type interventions **effective** for individuals with communication disability in terms of **changing behaviour**?

Pic by B.Hemsley using ChatGPT4o

Method: Protocol for the Systematic Review

NIHR | National Institute for Health and Care Research

PROSPERO
International prospective register of systematic reviews

Print | PDF

A systematic review of gestalt language processing interventions in children or adults with communication disability

Bronwyn Hemsley, Lucy Bryant, Caroline Bowen, Rachel Grove, Gaenor Dixon, Katharine Beals, Howard Shane

[1] Hemsley, B., Bryant, L., Bowen, C., Grove, R., Dixon, G., Beals, K., & Shane, H. (2024) Published review protocol: A systematic review of gestalt language processing interventions in children or adults with communication disability. *National Institute for Health and Care Research, PROSPERO International prospective register of systematic reviews*. PROSPERO 2024 CRD42024518468 *https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42024518468*

Inclusion Criteria

- Original research
- About GLP/NLA + citing Blanc 2012
- In English and full text
- Treatment study of *any* design

Exclusion Criteria

- Not in English or full text
- Not about GLP/NLA or no participants with communication disability
- Not original research
- Not a treatment study

Databases first searched on 18th March 2024

A systematic search on 18th March 2024 in the following databases:

1. Cochrane Library
2. Cumulative Index of Nursing and Allied Health Literatures (CINAHL, EBSCOhost)
3. Education Database (ProQuest)
4. Education Research Complete (EBSCO Host)
5. Education Resources Information Clearinghouse (ERIC, EBSCOhost)
6. Embase (OVID)
7. Google Scholar
8. Linguistics and Language Behavior Abstracts (LLBA, ProQuest),
9. MEDLINE (via OVID)
10. ProQuest Central
11. ProQuest Dissertations and Theses Global,
12. Psychology & Behavioral Sciences Collection (EBSCOhost)
13. PsycINFO (EBSCOhost)
14. SpeechBITE
15. Web of Science (all databases)

Further searches in publisher-specific databases (18th March):

16. Sage Journals Online
17. ScienceDirect (Elsevier)
18. Taylor & Francis Online
19. Wiley Online Library

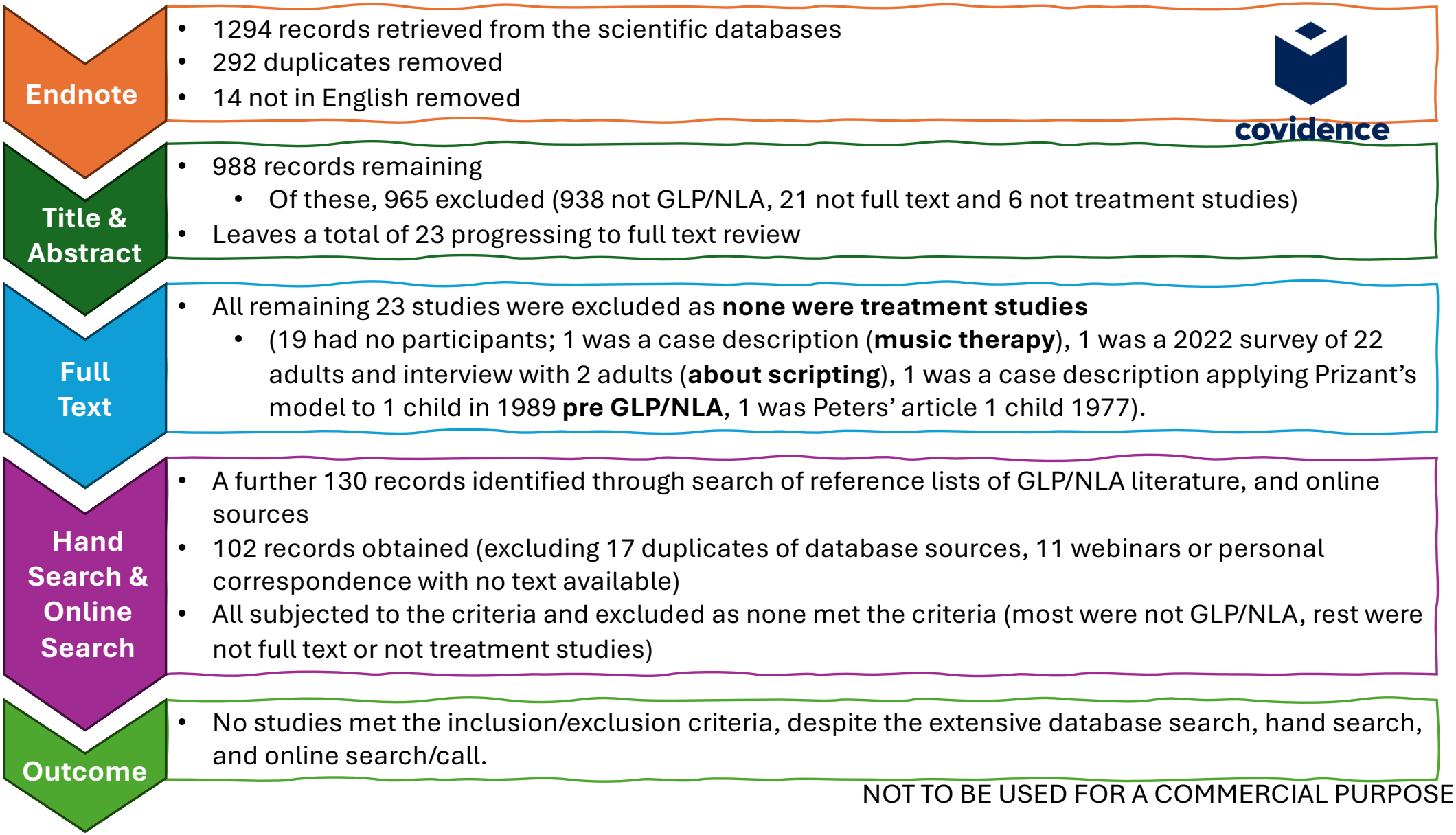
And in the following registries of clinical trials (18th March):

20. EU Clinical Trial Register (https://www.clinicaltrialsregister.eu)
21. Australian New Zealand Clinical Trials Registry (ANZCTR) (http://www.anzctr.org.au/TrialSearch.aspx)
22. ClinicalTrials.gov (https://ClinicalTrials.gov)

Alerts set in all databases so any new references appearing during the review period were emailed to the first author and screened for inclusion.

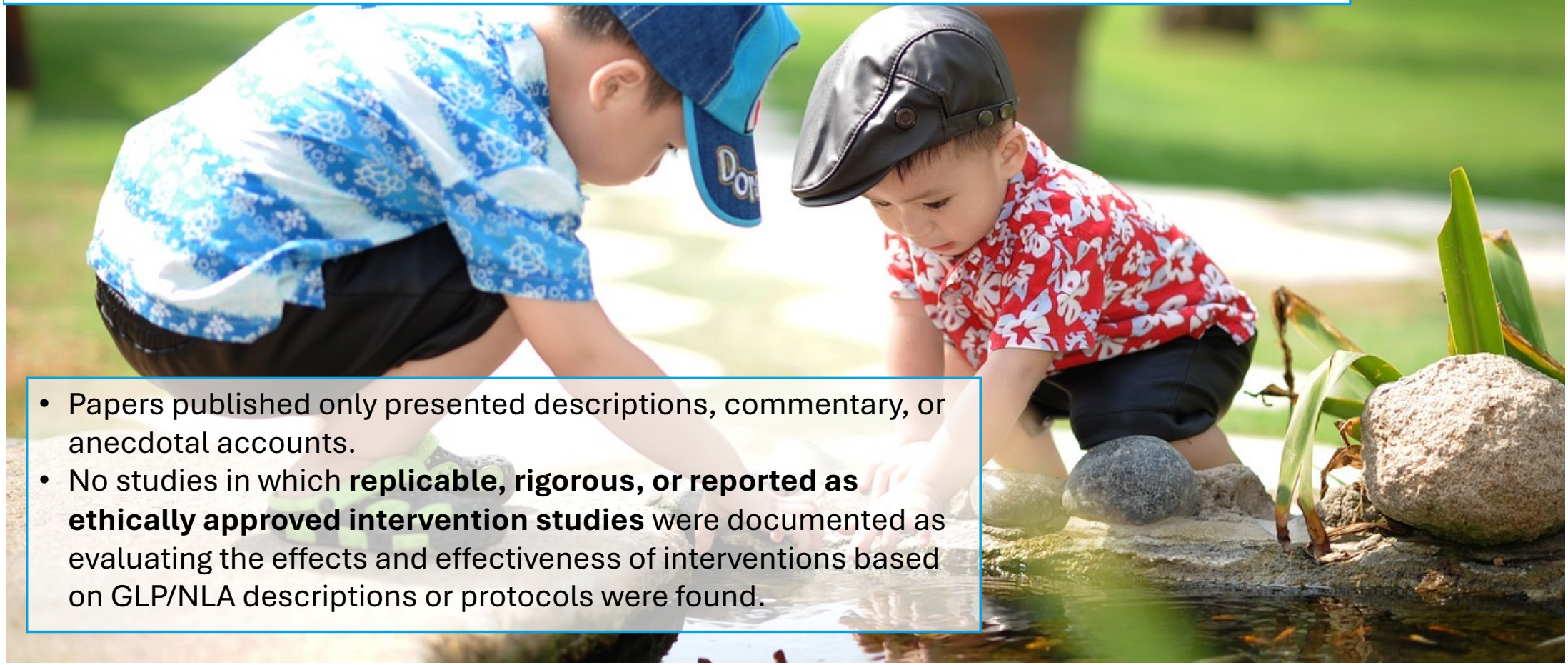
A hand search of citations in GLP/NLA literature using websites, publications, and published reference lists, and Google

A request on an ASHA listserve (6th March) for people to send in any studies that they knew about.



Findings

This systematic search for **empirical evidence**, in the form of intervention studies, found no research evidence for practices informed by the GLP/NLA protocol to support the language acquisition and development, communication, or behaviour of individuals with communication disability.



- Papers published only presented descriptions, commentary, or anecdotal accounts.
- No studies in which **replicable, rigorous, or reported as ethically approved intervention studies** were documented as evaluating the effects and effectiveness of interventions based on GLP/NLA descriptions or protocols were found.

Directions for Future Research

Investigate how these approaches are actually being implemented.
"It is also unknown whether clinicians do in fact implement the GLP/NLA-type interventions with fidelity (i.e., using the protocol as described by Blanc and colleagues [17, 23]) or if only parts of Blanc's prescriptive protocol are followed, why, and with what outcome measures and results." Bryant et al., 2024

Look for both positives and negatives (to avoid bias)
"While further research could explore and seek to understand the experiences of clinicians in implementing GLP/NLA-type interventions, this should not only be to understand benefits observed, but also to explore the experiences of clinicians who have adopted and abandoned the approach, for their observations on any adverse reactions, dangers, or risk; (e.g., facilitated communication or rapid prompting method, as outlined in Blanc [17]) and indeed, for any outcomes leading them to abandon the practice." Bryant et al., 2024

https://link.springer.com/article/10.1007/s40474-024-00312-z

FAQ: Why exclude non-treatment studies?

- A systematic review of a treatment can only include treatment studies (quant or qual).
- Looking at the literature that could not be included in a systematic review of treatment studies is our current step
- We are now doing a meta-narrative review

NEW: A meta-narrative review that can include any type of publication, commentary, editorials, reviews, books, chapters, journal articles …

NIHR | National Institute for Health and Care Research

PROSPERO
International prospective register of systematic reviews

Print | PDF

A Meta-Narrative Review of Gestalt Language Processing and Natural Language Acquisition Related Approaches for Children or Adults with Communication Disability: Assessment and Treatment Characteristics

Bronwyn Hemsley, Lucy Bryant, Julia Dray, Caroline Bowen, Katharine Beals, Howard Shane, Lisa Audet, Gaenor Dixon, Jacqueline Lim, Jill Senner, Rowan LaForce

https://www.crd.york.ac.uk/PROSPERO/view/CRD42024628375

https://www.crd.york.ac.uk/PROSPERO/view/CRD42024628375

Meta-Narrative review questions (published)

The main review question relates to the **nature** of GLP/NLA approaches:

"What are the **features and outcomes** of Gestalt Language Processing and Natural Language Acquisition related therapies for minimally- or non-speaking individuals?"

A meta-narrative review method can only describe the nature and outcomes, not effectiveness

A systematic review seeks to answer questions about effectiveness of interventions

1. Is the use of GLP/NLA-type interventions **effective** for individuals with communication disability in terms of **improving language skills**?
2. Is the use of GLP/NLA-type interventions **effective** for individuals with communication disability in terms of **improving communication skills**?
3. Is the use of GLP/NLA-type interventions **effective** for individuals with communication disability in terms of **changing behaviour**?

Meta-Narrative review questions (published)

In answering this question, we aim to answer the following:

-What is the pedagogy of GLP/NLA type approaches for people with communication disability?

-What are the characteristics of people identified as suitable for or not suitable for receiving GLP/NLA type therapy?

-Who assigns the label, description or diagnosis to the person labelled/identified/diagnosed as being a GLP or Dual -Language Processor or Analytic Language Processor in a GLP/NLA framework?

-What are the components of screening and/or assessment of speech, communication, language, or behaviour n GLP/NLA type approaches?

-What are the targets for therapy in GLP/NLA type approaches and what are ruled out as targets for therapy?

-Who is the agent of the intervention in a GLP/NLA framework related approach?

-What is the course, frequency, and duration of therapy sessions, or dosage, recommended?

-What are any comparisons made with other interventions (or the condition of treatment as usual or no treatment)?

-What measures are taken and used in determining treatment outcomes? What are the short and long-term outcome measures for outcomes to be monitored, reported or observed?

-What other interventions are promoted/recommended alongside GLP/NLA-type approaches?

-Are there any cautions outlined in relation to the implementation of GLP/NLA type approaches?

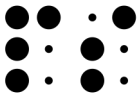
-Are GLP/NLA type approaches associated with the promotion, delivery or use of harmful or potentially harmful techniques such as Facilitated Communication or its variants or Rapid Prompting Method or its variants (Spelling to Communicate, S2C, Spellers Method).

Meta-narrative review: Progress so far ...

covidence

Sources Identified: ✓ → Duplicates Removed: ✓ → Records Screened: ✓ → Records Excluded: ✓ → Records Included for Review: ✓

- Books / Textbooks ✓
- Book Chapters ✓
- Peer-Reviewed Journal Articles ✓
- Magazine Articles ✓
- Online Reports ✓
- Protocols ✓
- Theses ✓
- Web Pages ✓



- Primary sources (directly report methods/implementation) ✓
- Secondary sources (report evaluation, critique, summary) ✓

- Supportive of GLP/NLA approaches ✓
- Critical of GLP/NLA approaches ✓

Lack of agreement in the definition of ...

Gestalt Language Processor defined loosely in only some of the primary sources

- Someone who uses echolalia
- Someone who communicates using gestalts
- Someone who uses echolalia or gestalts to acquire language

Gestalt is defined loosely in only some of the primary sources

- Melodic pattern
- Sound stream
- Scripts
- Chunk of speech/language
- Could be a single word
- Unconventional language behaviours
- Multiword utterances memorised as wholes
- Formulaic utterances
- Unanalyzed chunks
- Prefabricated routine
- Wholes
- Delayed echolalia

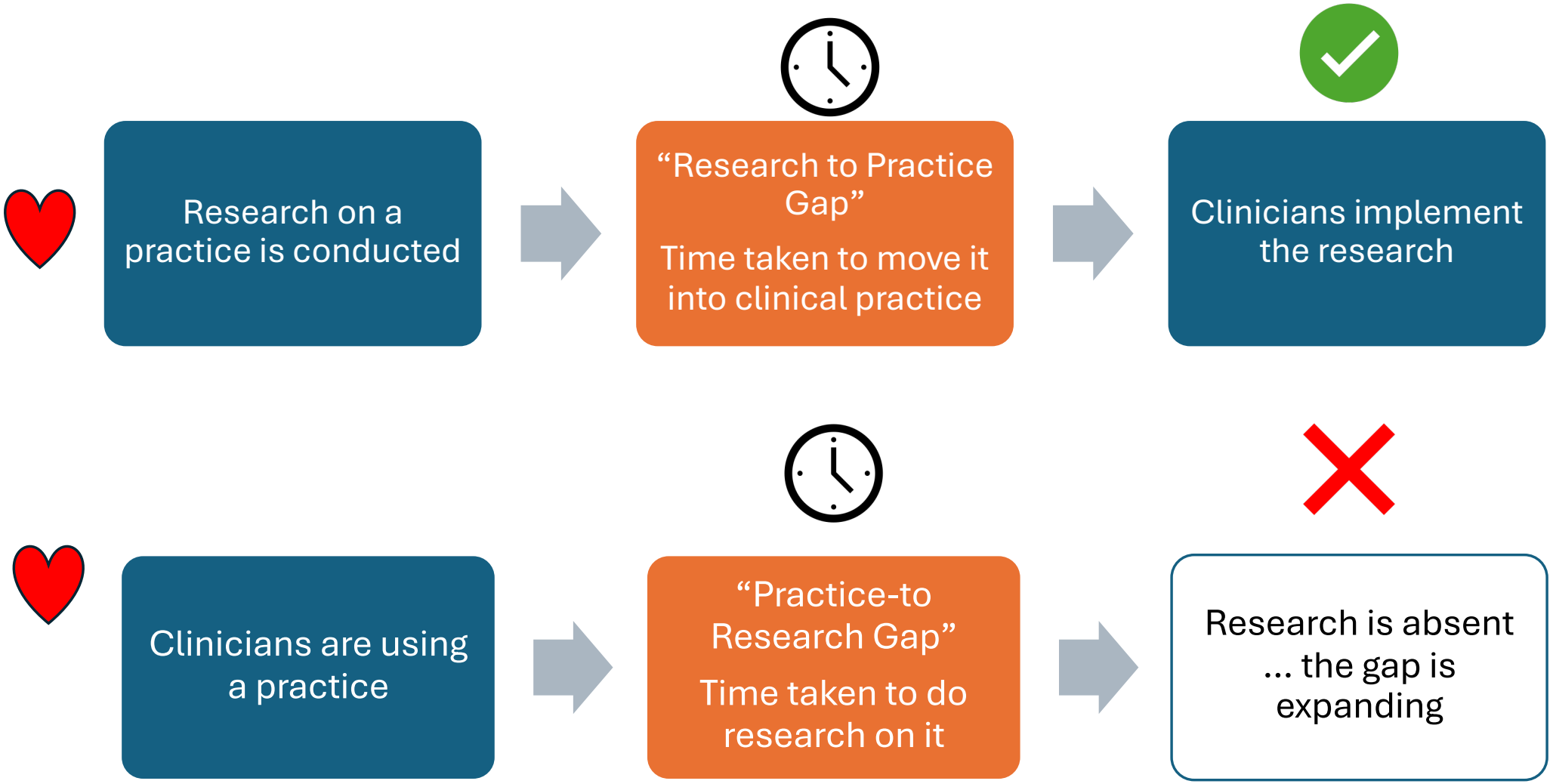
Next steps in the meta-narrative review …

- New sources are still entering the review (books, articles)
- Extract data/information from the sources
- Analyse data across the sources
- Present the results in seminars and articles, conference presentations

Part 3. Clinical, ethical, and research implications

Now that we know this, does our thinking, talking about GLP/NLA, or practice change?

The practice-to-research gap evident in GLP/NLA implementation



Calls for research since the 1980s have not been answered

"...it is inappropriate to offer any formal "conclusion": We are only at the outset of a newly defined course of exploration." (Peters, 1983)

30 years

"... detailed longitudinal research needs to be undertaken following children from prelinguistic stages through the acquisition of complex and spontaneous language" [Prizant, 1983, p.305].

30 years

Blanc [3] (2012)

In 2022:

"Do we need more research on gestalt language development to prove that it exists?"

"Nope**! We have plenty of research** to show that gestalt language development exists!"

Further info cites Peters, Prizant 1983 and Blanc 2012.
https://www.instagram.com/p/CsEKdsEOeVA/?utm_source=ig_web_copy_link

The Blanc (2012) text does not include any information about a research project.

[1] Peters AM. The units of language acquisition. Cambridge: Cambridge University Press; 1983.
[2] Prizant BM. Language acquisition and communicative behavior in autism: Toward an understanding of the" whole" of it. Journal of Speech and Hearing Disorders. 1983;48(3):296-307.
[3] Blanc M. Natural language acquisition on the autism spectrum: The journey from echolalia to self-generated language. Madison, WI: Communication Development Center; 2012.

An imperative for evidence-based practice

"The discipline of speech-language pathology stands at the intersection of **science** and **compassionate care**, addressing a diverse array of communication and swallowing disorders, while striving **to enhance the quality of life for individuals**".

Naudé, A., Kanji, A., Louw, B., & Bornman, J. (2025). Systematic review of international ethics knowledge in the speech-language pathology literature (1980–2022). *International Journal of Speech-Language Pathology*, 1–24. https://doi.org/10.1080/17549507.2024.2438106

Criteria for evaluating future GLP/NLA research

This is what we want and expect to see in an allied health profession:

- **Background:** Theory of what is being researched and why
- **Ethics:** Was the research conducted ethically, who approved
- **Aim:** What was the aim of the research?
- **Method:** Should reflect the aim and be well-described.
- **Intervention or Assessment:** Measures used.
- **Participants:** Demographic data.
- **Results:** Should be reported in full.
- **Limitations:** Should be acknowledged.
- **Conclusions:** Should relate to the aims, methods, results.

Quality criteria: CASP (Critical Appraisal Checklists)
https://casp-uk.net/casp-tools-checklists/
GRADE – quality of reviews and synthesis studies:
https://training.cochrane.org/grade-approach

Many people ask – what else should we do?

We need to justify our treatment choices:

- Whitehouse, A., Varcin, K., Waddington, H., Sulek, R., Bent, C., Ashburner, J., Eapen, V., Goodall, E., Hudry, K., Roberts, J., Silove, N., & Trembath, D. (2020). *Interventions for children on the autism spectrum: A synthesis of research evidence*. Autism Cooperative Research Centre. Retrieved 25 Sept 2025 from https://www.autismcrc.com.au/interventions-evidence.

- Wong, C., Odom, S.L., Hume, K.A., Cox, A.W., Fettig, A., Kucharczyk, S., Brock, M.E., Plavnick, J.B., Fleury, V.P., & Schultz, T.R. (2015). Evidence-based practices for children, youth, and young adults with autism spectrum disorder: A comprehensive review. *Journal of Autism and Developmental Disorders, 45*(7), 1951-1966. **https://doi.org/10.1007/s10803-014-2351-z.**

Evidence-based interventions in autism

- https://www.autismcrc.com.au/interventions-evidence/summary-umbrella-review/evidence-table

- **+** means that all available evidence indicated a **positive effect** of the intervention on a given child or family outcome.
- **?** means that there was a **mixture of positive and null effects** reported for the intervention on a given child or family outcome.
- **O** means that all available evidence indicated a **null effect** of the intervention on a given child or family outcome.

- **H** indicates **evidence from a high quality review**
- **M** indicates **evidence from a moderate quality review**
- **L** indicates **evidence from a low quality review**

Selection of just some of the individual studies and systematic reviews – more than 61 studies!

O'Keeffe C, McNally S. A systematic review of play-based interventions targeting the social communication skills of children with autism spectrum disorder in educational contexts. RJADD. 2023;10(1):51-81. **9 STUDIES**

Biggs EE, Carter EW, Gilson CB. Systematic review of interventions involving aided AAC modeling for children with complex communication needs. AJIDD. 2018;123(5):443-73. **48 STUDIES**

Holyfield C, Drager KDR, Kremkow JMD, Light J. Systematic review of AAC intervention research for adolescents and adults with autism spectrum disorder. AAC. 2017;33(4):201-12. **18 STUDIES**

Logan K, Iacono T, Trembath D. A systematic review of research into aided AAC to increase social-communication functions in children with autism spectrum disorder. AAC. 2017;33:51-64. **30 STUDIES**

Sievers SB, Trembath D, Westerveld M. A systematic review of predictors, moderators, and mediators of augmentative and alternative communication (AAC) outcomes for children with autism spectrum disorder. AAC. 2018;34:219-29. **7 STUDIES**

Kent-Walsh J, Murza KA, Malani MD, Binger C. Effects of communication partner instruction on the communication of individuals using AAC: A meta-analysis. AAC. 2015;31(4):271-84. **17 STUDIES**

White EN, Ayres KM, Snyder SK, Cagliani RR, Ledford JR. Augmentative and alternative communication and speech production for individuals with ASD: A systematic review. JADD. **28 STUDIES** 2021;51:4199-212.

Rose V, Trembath D, Keen D, Paynter J. The proportion of minimally verbal children with autism spectrum disorder in a community-based early intervention programme. JIDR. 2016;60(5):464-77.

Alzrayer NM, Aldabas R, Alhossein A, Alharthi H. Naturalistic teaching approach to develop spontaneous vocalizations and augmented communication in children with autism spectrum disorder. AAC. 2021;37(1):14-24.

Gaddy C, Crow H. A primer on neurodiversity-affirming speech language services for autistic individuals. Perspectives of the ASHA Special Interest Groups. 2023;8(6):1220-37.

Allen AA, Shane HC, Schlosser RW, Haynes CW. The effect of cue type on directive-following in children with moderate to severe autism spectrum disorder. AAC. 2021;37(3):168-79.

Logan K, Iacono T, Trembath D. Aided enhanced milieu teaching to develop symbolic and social communication skills in children with autism spectrum disorder. AAC. 2024;40(2):125-39.

We are often asked why we do not systematically review behavioural therapies …

- Collins, I.M., Halter, ., Schächinger Tenés, L. . *et al.* A Meta-Analysis of Applied Behavior Analysis-Based Interventions to Improve Communication, Adaptive, and Cognitive Skills in Children on the Autism Spectrum. *Rev J Autism Dev Disord* (2025). https://doi.org/10.1007/s40489-025-00506-0
- Conrad CE, Ziegler SMT, Bilenberg N, Christiansen J, Fagerlund B, Jakobsen RH, Jeppesen P, Kamp CB, Thomsen PH, Jakobsen JC, Lauritsen MB. Parent-mediated interventions versus usual care in children with autism spectrum disorders: A protocol for a systematic review with meta-analysis and Trial Sequential Analysis. PLoS One. 2025 May 16;20(5):e0323798. doi: 10.1371/journal.pone.0323798. PMID: 40378107; PMCID: PMC12083817.
- Rosales, M. R., Butera, C. D., Wilson, R. B., Zhou, J., Maus, E., Zhao, H., … Dusing, S. C. (2025). Systematic Review and Meta-Analysis of the Effect of Motor Intervention on Cognition, Communication, and Social Interaction in Children with Autism Spectrum Disorder. *Physical & Occupational Therapy In Pediatrics*, *45*(5), 688–710. https://doi.org/10.1080/01942638.2025.2498357

In the absence of evidence: clinical reasoning & ethical decision-making

- **Exercise caution** when considering any use of GLP/NLA related approaches to intervention.
- **Anecdotal reports** play heavily on an emotional response, and clinical reasoning should be in the forefront of clinical decisions.
- **Many well supported, documented and evidence-based interventions exist** that can support the language and communication development of autistic children and adults in neurodiversity-affirming ways.
- These can acknowledge and support the communication preferences of autistic children and adults.
- **Clear justification is needed when abandoning these approaches** in favour of another without any such evidence.

Assessment

Look beyond the label, and the lens that comes with it, to see and describe the child's communication abilities and needs.

What does the child understand?

What can they express, in which modality of communication? (speech, unaided AAC, aided AAC, behaviour)

What is their symbolic understanding?

Feature-Matching Dynamic Assessment

Participation Model of AAC

Communication Needs Model

Communicative Competencies Model

How do you currently assess minimally- or non-speaking children and adults?

Observation
Parent interview
Video of communication in natural settings
Modified standardised tests
Adapted tests
Play tasks
Communication and language sampling
Checklists
Scales

Multiple ways!

Summary of Answers to FAQs

Increased caution and critical appraisal of GLP/NLA,

open dialogue and discussion that accepts and explores critical appraisal

Increased dissemination and availability of high quality and evidence-based information

: about echolalia and language learning in autism and about neurodiversity-affirming practice

Increased due diligence

raised expectations in professional bodies and clinicians

: to ask questions of those who disseminate information that is uncritically supportive of GLP/NLA

Collect and regularly analyze empirical data and outcome measures

Independent measures

Clinicians to **provide truthful information to parents**

including the absence of evidence supporting both the theoretical foundations and suggested interventions for GLP/NLA-type interventions.

Clinicians **know the ethical implications** of using a non-evidence-based intervention including both financial and opportunity costs

Q. Intervention & Therapy: what do we do?

- What interventions for autistic children and adults should an SLT be providing?
- Is there any harm in using a child led approach and acknowledging gestalts through play and use of AAC. I've seen positive.
- Which approaches would you recommend to accrue the most beneficial outcomes for these children?
- Regardless of the evidence, can we not just model a range of single words and short phrases to see what they respond to best?
- How to respond to echolalia

A. Affirm, model, and teach language

- Provide all interventions you would for early language learners
- Teach single word concepts and combining words as well as grammar
- Target comprehension and improved understanding
- Affirm echolalia and treat it as communicative – see it as a starting point for the concepts the child is attending to and interested in
- Identify the child's actual skills in symbolic understanding
- Encourage joint attention
- Follow the child's lead – person-centred, child-centred, family-centred approaches
- Model language: Implicit language learning / teaching; as well as Explicit language teaching
- The word 'teaching' here does not mean 'compliance based' (there are many many therapy approaches that encourage active learning without requiring reward for compliance! Genuine communication does sometimes **require** a communicative act (e.g., barrier tasks, child telling the clinician what to do) but need not require **compliance** if the child does not wish to respond (as for any child-led, peer-led, or clinician-led therapy activity)
- Encourage multimodal communication (using many modalities – pictures, video, words, gestures, introducing AAC).
- See our slides for those parts of our talk showing other studies.

Q. Lack of evidence: what does this mean?

- Is there any evidence for GLP/NLA in regards to children who use AAC or other populations?

A. Take data and track outcomes

- No. There is no published research evidence available on GLP/NLA for any population.
- People implementing the approach should collect clinical data on measurable outcomes.
- Ethical responsibility to take measures and track progress according to pre-determined language goals (e.g., receptive and expressive language, speech, AAC outcomes).
- There is no standard definition of what is a ‘gestalt’ and what is a ‘GLP’
- There are many claims made that GLP/NLA approach is based on research – there is no evidence of this. If it is based on observations, these could be reported in research.
- There is limited research on what clinicians are *actually* doing when they say they are implementing GLP/NLA (fidelity).

Q. Future research: what could be done?

- What research and outcome measures?

A. Implementation science + treatment research

- Research on what clinicians are actually doing (vs what they say they are doing) (Implementation science)
- **Treatment studies** are necessary in research examining treatment outcomes.
- Given the widespread reports of hundreds of children benefiting from GLP/NLA approaches, it should be feasible to conduct treatment research.
- **Qualitative studies** are also important for the human experience of those treatments.
- We would expect to see **single case designs** and **small group studies** introducing group controls – with comparable children who do and do not receive the GLP/NLA approach and comparing treatment outcomes.
- Randomised controlled trials are costly and are unlikely to be attempted until the earlier phase designs show positive outcomes.

Q. Parents: what do we tell them?

- What is the best approach to inform and advise parents and teachers about GLP whilst maintaining an evidence-based focus?
- What should we be telling parents regarding this topic and what treatment approaches should we be using with these children

A. A fully informed parent

- Let them know the results of our review.
- Advise parents to approach their child as a language learner, that all children communicate and that regardless of language learning 'style' that has been labelled, the child has the potential to learn to understand and express themselves using a variety of modalities.
- Introduce/support multimodal communication.
- Use graphic symbols, pictures, visual supports to understanding.
- Support both comprehension and production.
- Do not wait to introduce teaching of single words and concepts.
- Do not wait to introduce verbs and two-word combinations.
- Do not model telegraphic speech – use grammar.

Q. Why is it popular?

- Why do you think parents and the speech therapy profession appear to have embraced gestalt language processing?
- Parents are now aware of the GLP due to its popularity on social media. Do you have any tips for managing conversation re EBPP?

A. Shared goals & conversations

- Reasons for its popularity are outlined in our systematic review - social media marketing, testimonials, conferences, and word-of-mouth from GLP/NLA-trained clinicians to colleagues.
- **See the Menti result** - SLTs who go to online training or take in social media posts are going to work and promoting it to colleagues – this gives credence to the approach, without the colleagues having access to the evidence base about it.
- Our research has not gathered the views of parents or adults who identify as GLPs so presenting their views are beyond the scope of this webinar.
- **Managing conversations:** It should be safe to raise an objection to GLP/NLA just as it is safe to raise an objection to critics of GLP/NLA.
- Approaching conversations with a shared goal of increasing children's communicative competence brings it back to a shared goal of improving communication and language in autistic children.
- Focus on the child and their goals for language, communication, and behaviour.

Q. Assessment and Diagnosis

- What do we consider in terms of assessment?

A. All children can communicate

- Everything you would usually consider for a neurodivergent, minimally- or non-speaking client.
- As there are no assessment or diagnostic criteria for identifying who is and is not a GLP, we need to treat all children as language learners with their own specific profile of skills and impairments and take a strengths-based approach to teaching them language.
- Our presentation has reviewed echolalia prevalence studies to date.
- Use a wide range of assessments – observation, scales, checklists, modify standardized assessments, adapt assessments for access, language sampling.
- Minimally- and non-speaking autistic children need access to language interventions to teach them the language concepts.
- Echolalia can be communicative, so it is important to treat it as a starting point and teach the language concepts from single words and two-word combinations.

Q. AAC and Technology

- How does GLP relate to AAC practice/ interventions?
- Where can I read more about GLP and AAC?
- Thoughts on inputting gestalts into AAC devices? I.e. using gestalts + potential mitigations and/or phrase-based vocabulary sets

A. Multimodal communication

- Introduce AAC (pictures, object symbols, real-world cues to meaning)
- Treat all modalities as meaningful (speech, gesture, body language, pictures, photos, videos)
- Do not only focus on phrases/gestalts – focus also on single words and learning word combinations
- Aided language stimulation
- Augmented input
- Video modelling
- Responding to the child's extant communication bids

Q. Will there be guidance on GLP/NLA?

- Will there be GLP guidance for practitioners?
- The GLP model attracts very strong opinions from both 'sides'. How can we navigate this huge divide using evidence-based pract?
- How can we address the divide between those who promote GLP and those that who want to see more evidence in a professional way

A. SLTs are qualified.

- See our systematic review 'Discussion' section
- There is no definition of either GLP or ALP – treat all children as potential language learners, regardless of any 'style' that is applied to them or inferred about them.
- An SLT is qualified by their training currently to see all children who require SLT services.
- There is no indication of a need for GLP/NLA approach training specifically to enable SLTs to work with minimally- or non-speaking children with any condition (autism, cerebral palsy, etc)
- Finding a common ground (ie of helping the child in front of us both) and shared language goals that enable growth in joint attention, comprehension, child-led language-focused activities.
- There is a need to provide training to SLTs about the evidence or lack of in relation to GLP/NLA and how to manage the situation of differences of opinion in a safe way (e.g., particularly where colleagues differ in their opinions, views, and experiences).
- It should be safe to disagree about any intervention in SLT. Clinical autonomy means that each clinician can individually arrive at their own decision.
- If services decide to have policies, then these policies need to take evidence into account. Training on implementing the policies might be needed.
- If clinical guidance is provided, it should be based on evidence.

Q. Training

- Would the panel recommend teaching about GLP on an accredited BSc SLT programme, and if so what should we teach?

A. Teach to the evidence base

- Teach to the evidence base – that is our responsibility.
- Teach about the lack of research evidence – use the systematic review and commentary papers about the approach (as we have done in this webinar).
- Teach how to manage conversations between a practice educator and a student being asked to implement GLP/NLA. Finding a common ground (ie of helping the child in front of us both) and shared language goals that enable growth in joint attention, comprehension, child-led language-focused activities.
- However, students should not be expected to implement GLP/NLA interventions, nor plan sessions related to these, etc. Student competency should not hinge on their implementation of GLP/NLA.
- Teach about the differences of opinion – it is a contentious approach.
- Encourage students to contact their University staff for support in managing the conversations and expectations.
- Teach about AAC in minimally- or non-speaking individuals (assessment, therapy, AAC design, language learning, multimodal communication)
- Ask me for my slides to use in your University's training.

Q. Contentious issues

- Have you considered that the continuing rise in the use of GLP/NLA arises from not only Social Media marketing, as you state, but also the fact that many clinicians and families have tried it and it works?

A. Question everything

- Beware of conspiracy theories and misinformation being posted online by GLP/NLA proponents as repeated ad hominem attacks on the authors.
- People should disclose their financial interests in GLP/NLA.
- Claims of therapists and parents that GLP/NLA approaches are effective are not free of bias.
- We are not claiming that GLP/NLA approaches are ineffective – our review shows that there is no research evidence to back up the claim that they are effective.
- All research has limitations, including our systematic review.
- All treatment studies have limitations and should be designed to remove bias as much as possible.

Q. Is there more we could be doing for adults?

- I work in an adult setting with autistic adults with LD/challenging behaviour. A lot of the thinking around GLP is focused on children, naturally we want to honour those who have learned/are learning language in a different way, but the context feels so different. **Currently we are ensuring that we try and identify what people's gestalts may mean so that they can be supported well. Is there more that we can be doing, given the current EB?**

A. Help people to understand the communicative acts of adults

- Adults with behaviours of concern do need communication supports, both in relation to their day-to-day communication and in relation to their management of behaviours of concern.
- How is the person communicating, including ALL of the ways they are communicating (echolalia, vocalisations, facial expressions, body language, words, symbols, pictures, photos, objects, object parts).
- There is no need to limit the evaluation and therapy to ‘gestalts’ and to echoed phrases. The principles of multimodal communication still apply.
- The SLT would help the communication partners to understand and interpret what the person with disability is thinking, feeling, understanding, and wanting to express.

Q and A. Questions about limitations

- We acknowledged the limitations in our review.
- We have added two autistic SLTs to our team for future research on GLP/NLA.
- Lived experience of any person is not a measure of treatment effectiveness. Treatment **effectiveness** is determined through treatment research designs (as pointed out in our slide set, we expect to see established research methods for treatment studies, if claims of treatment benefit are being made).
- As we mentioned, **research on lived experiences** is an important area for future research, such as how people **experience** a particular intervention, or their **views** on the outcomes, but it cannot **measure** treatment outcomes.

Q. Why do you group GLP/NLA?

- I’m interested to know why you have grouped both GLP and NLA together when GLP is considered a theoretical description of how some children develop language and NLA is a framework or approach for supporting children thought to be GLPs?

A. Because NLA is the 'therapy approach' pitched at/paired with GLPs

- Our systematic review was looking at the **outcomes of intervention**, as measured through **treatment research**.
- The NLA stages outline supports for moving a child **deemed to be a GLP** through the stages of **NLA** natural language acquisition – hence our focus on both GLP and NLA: they are connected in the literature.
- Hence, the reference to 'GLP/NLA' is recognizing that this is paired in the literature, and the NLA is the 'intervention'.
- It is not conflating the two, it is bundling the two, as they are in Blanc (2012) and Battye (2025).
- Not all texts do this bundling – but the two main texts cited as the sources of therapy guidance do so, and so did our systematic review.

Q. Why focus on GLP/NLA (not on x, y, z …)

- Why does this review seem to single out GLP/NLA for such intense scrutiny? How does the profession ensure consistent standards when evaluating interventions, and avoid unfairly discrediting approaches that are still evolving?

A. Any approach costing parents time and money is worthy of attention as to efficacy

- There are several interventions aimed at autistic children that have been discredited in the literature (e.g., facilitated communication, spelling to communicate).
- GLP/NLA proponents are making claims that need to be tested. Nobody has yet tested those claims in research.
- There are several other researchers looking into effectiveness of a wide range of other interventions (see our slide on that).
- The profession must ensure that is it safe for **ANY** intervention to have scrutiny.
- Research can be conducted on any intervention even if it is evolving. Indeed, research should inform the evoluation. We would expect to see small-scale studies first, as we have outlined.

Q. What is the likely outcome towards AAC?

- This is a newer area for me but the mainstream school where I work has just set up a year 1 base (5 year olds) for children with autism who have not managed in reception in mainstream. 4/12 of these children are currently non speaking. I am learning and working with the specialist teacher but my question is **what is the likelihood that AAC will be required for these children rather than spoken language?**

A. It is likely that the children will need to use AAC as part of their multimodal communication system.

- About 25% of autistic children will be minimally-or non-speaking and will rely on the use of AAC and communication partner supports.
- So your figure of 4/12 of your group being non-speaking would be in line with that.
- The introduction of AAC will help those children.
- The AAC can be used as well as speech and any behaviours, to communicate.
- So it is not about “AAC instead of” but rather “AAC as well as” any other forms of communication (eg body language, speech, gestures, pictures, visual scenes, speech devices, etc)

Q. Echolalia questions

- What is the prevalence of echolalia in typically-developing children?
- The discussion around echolalia research going back a long time - please can you give us a simple summary of what they all indicate?

A. Echolalia

- We are not aware of any prevalence study that provides an estimate for the prevalence of echolalia in typically developing children.
- Prevalence estimates are limited by the lack of agreed definitions of, and assessments for, echolalia.
- For the whole echolalia review, that goes into the issues more thoroughly, please see the link in the slides.

Q. Trouble learning verbs

- What about the evidence reported from clinician experience that individuals in stages 1 and 2 do struggle with learning verbs, and don't tend to pick them up unless it is wrote (sic) learning?

A. Children who are relying on echolalia to communicate need to learn verbs.

- The question refers to “struggle with learning verbs” for a population of children who are minimally- or non-speaking (framed as fitting into NLA Stages 1 and 2).
- There is no need to focus on (or require) ‘rote learning’. We want meaning to be understood when attached to the words that are at focus.
- This population will “struggle to learn” a variety of language concepts (eg adjectives, prepositions, verbs) even if nouns are easier to represent through objects/pictures. They need implicit and explicit language teaching to learn these concepts.
- We need to support them to learn verbs, adjectives, prepositions etc
- Using implicit and explicit teaching, minimally and non-speaking children can learn to comprehend verbs and use verbs whether it be through the use of objects/photos/symbols/gestures/visuals/videos/speech.

Q. Formulaic vs Productive language

- I have not seen any research drawing links between the 'gestalt/analytic' distinction and the body of research around 'formulaic' versus 'productive' language which recognises that a very high proportion of (typical) language is formulaic. Are you aware of any links being made here and if not might this be a useful exploration to consider echolalic language development in the broader context of typical language use? Thanks.

A. Beyond the scope of our review.

- Our systematic review scope was only on GLP/NLA.
- Our meta-narrative review is about GLP/NLA and not about ‘formulaic language’.

Q. Play-based therapy and NLA?

- You mention alternatives like play-based therapy and AAC modelling. Why couldn’t NLA be used alongside these methods? Is there a reason it’s treated as separate rather than potentially complementary?

A. GLP/NLA is promoted as a unique, new, ‘paradigm shift’. But most of it is not original.

- A lot of components of GLP/NLA are not unique at all and have been recommended for years (as we note in our slides).
- **What’s unique about GLP/NLA** is that it directs clinicians (for minimally-or non-speaking children or adults) to not work on single words or phrases until later, and to avoid verb phrases etc etc – these things set it apart from other strategies.
- **There is no research showing how clinicians are implementing GLP/NLA** type approaches either as a ‘package’ primarily following the description of the texts (Blanc, Battye) or otherwise
- Thus, it is not known if it is being used in isolation or as a complementary therapy to other approaches.
- Anecdotal reports suggest that clinicians are picking out some elements of GLP/NLA and abandoning other elements, and are adding in parts of GLP/NLA approach into the other approaches that they are using. (see Menti slide about this).
- **More research is needed to identify exactly what clinicians are doing when they say they are implementing/following GLP/NLA principles or directions.**

Q. How does the peer review work for an empty review?

- Since the study didn’t include any empirical papers, how did the peer review process work? What kind of feedback did you get, and how did it shape the final version?

A. Pre- and post-publication peer review

- This paper underwent blind peer review.
- The peer review of an **empty review** is the same as for review that found any number of studies – as the review still requires rigorous reporting of background (rationale), aim, methods undertaken, the PRISMA flowchart of included/excluded studies, reasons for exclusion, results, and discussion of the result (empty).
- As well as peer-review prior to acceptance then publication, peer review (by readers, commentators, and the public) has also occurred extensively post-publication, through presentation in multiple conferences and workshops. To date, nobody has pointed out any studies that should have been included but were left out incorrectly.
- We did not set a **quality** criteria for inclusion of studies. That is, ultimately, despite an extensive search at the time, we found **no good quality or bad quality studies**, no small-scale or large-scale studies, no quant or qual studies, no published or unpublished studies (ie reports people have in their cupboard, not in a journal) measuring outcomes of a GLP/NLA approach.

Q. (Comment) Concerns about GLP/NLA

- I have concerns about some therapists labelling children as GLP/NLA when they are non-speaking (and no echolalia).
- Also, I have experienced a high level of militancy where some therapists are pushing for the stopping of other interventions that are working in favour of GLP/NLA approaches.

A. Avoid giving children labels when there are no agreed definitions.

- Blanc (2012) notes that gestalts can be “silent gestalts”. Clearly, silent gestalts cannot be identified or measured.
- Language sampling can be of communicative acts, not only speech.
- The stopping of other interventions is an inherent directive in the GLP/NLA texts, as we pointed out.
- Clinicians who are convinced about GLP/NLA may feel they are right to ‘be militant’ about what other clinicians should do or not do.
- All clinicians have the same autonomy in their decision-making and need to exercise their own clinical reasoning and justify their choices in line with all available evidence; including our review which is evidence of a lack of treatment studies showing any effectiveness.

Q. Is GLP a diagnosis?

- This is on an Education Health Care Plan for one of the clients I work with, from a report from an Independent SaLT, and I wonder if this is appropriate in a legal document?

A. No, GLP is a (undefined) *label*.

- Children should not be labelled as ‘GLP’ for the purposes of receiving therapy or services.
- Some people are now using the label very loosely, and applying it to any person who is autistic (or not) or echolalic (or not).
- The SLT diagnosis is in relation to the child’s communication impairment/disability/needs/profile.
- Describe the child in detail. There is no need to refer to their ‘language processing’ being gestalt or otherwise, when there is no agreed definition of GLP, and no research evidence behind the NLA stages.

Q. If a parent says ‘My child is a GLP’ or ‘I think …’

- If a parent was to ask/ bring up the fact that they think their child is a GLP, how would you respond? I have lots of parents with learning needs who would not be able to access this research. Thank you!

A. Your child is a communicator, and a learner

- There is no indication that an SLT should need a label of ‘GLP’ or ‘not a GLP’ in providing assessment or therapy; as the construct is a theoretical one, and one that lacks definition and agreed criteria.
- You could note that it is beyond your scope of practice as an evidence-based practitioner to determine if (and hence either agree or not with the parent) a child is a GLP or not, as this group have not been well described and there is no agreement in the literature about this.
- If it is the parent’s view that the child is a GLP, that is the parent’s view. Coming to agreement about the communication assessment needs and therapy goals is the next important step.
- You could ask the parent to go on to describe their child in more detail and how they communicate, and encourage them that as an SLT you are going to identify all the ways in which they are communicating and help them and their parents towards growth in communication and language.

Q. Should we not be implementing GLP/NLA?

- Hi, does this mean that we should not be implementing this approach/intervention until there is more rigorous evidence to support?

A. There is no indication that it should be implemented. Caution should be applied if choosing to follow GLP/NLA approaches.

- In the absence of research evidence, and the context of widespread uncritical praise, it is important to:
  - Be cautious about an approach that has no research
  - Be particularly cautious about stopping other effective interventions in favour of the approach
  - AAC is an effective intervention for this group (see slide on AAC research studies and autism evidence website)
  - Gather data on outcomes if implementing the approach. Include some independent measures, not only language sampling outcomes.
  - Remember to include outcomes relating to both comprehension and expression, not only expression.

Q. How can we do controlled trials?

- How can you ethically do a control study in this field- if both groups are GLP then doing analytical therapy with one group would not be ethically appropriate. As a practitioner who has seen the success of NLA with multiple children- I could not bring myself to provide what I feel is detrimental therapy to a control group for the purposes of research

A. There are many treatment designs.

- If you have not conducted research in the past, it is a good idea to get research design advice from an experienced researcher.
- Some controlled research trials **do not** require conduct of 'treatment as usual' or 'no treatment' and only focus on the intervention (e.g., single case multiple baseline designs, A-B-A design – and this does not refer to applied behaviour analysis, it refers to changing the condition from 'a' to 'b' and back to 'a' again, over time, while taking measures). Example info is here: https://opentextbc.ca/researchmethods/chapter/single-subject-research-designs/
- Some trials involve a wait-list approach (while waiting for therapy, measures are taken in a baseline, until the child reaches therapy, and then measures continue etc)
- Some trials do involve comparison with another intervention.
- GLP/NLA research trials are ethically complex, because they involve **withholding evidence-based interventions while children go through the NLA intervention**, and GLP/NLA approaches are not well defined enough to be planned and implemented with fidelity.

Q and A. What's the best way to be kept up to date with when the current research is released?

- LinkedIn profiles of Bronwyn Hemsley and Lucy Bryant
- Look for citations of any GLP/NLA journal articles.
- Follow the works of authors to date, and see if they publish again.
- Contact us for an update.

Feedback

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