

TOPICCal applications

TOPICC (Targeted Observation of Pragmatics in Children's Conversations) is a new assessment procedure developed for an intervention research project. Catherine Adams, Jacqueline Gaile, Elaine Lockton and Jenny Freed explain how it can help speech and language therapists in clinical practice plan, prioritise and show the outcome of intervention for a child with pragmatic difficulties.

READ THIS IF YOU WANT TO

- CAPTURE COMMUNICATION IN A NATURALISTIC WAY
- KNOW ABOUT A TOOL'S VALIDITY AND RELIABILITY
- USE ASSESSMENT TO PLAN THERAPY AND MEASURE OUTCOME

When we first met 'Charlie', he had been referred to us by his local speech and language therapist as a potential participant in our research project. We were aiming to investigate the effects of intervention for children who have disproportionate difficulty with pragmatics (figure 1), and Charlie seemed to fit the bill well.

Charlie was aged 8;4, attended a mainstream classroom and had a statement of special educational needs specifying twenty hours of learning support every week. He received a diagnosis of autism at age four, and some mild features such as inconsistent eye contact were still present. He also had difficulty making friends and did not understand how to join in language-based play. His language assessment revealed word-finding difficulties, significant problems of understanding and creating narratives, and difficulty in drawing visual and verbal inferences. His teachers expressed concern about Charlie's literacy, numeracy and lack of independence in class.

When we met Charlie it was evident that he had significant difficulties with a range of pragmatic behaviours. The challenge for us was to profile these in a naturalistic way using a valid method, to use this information both to plan therapy input and to show the outcome of intervention, and then to do the same sort of profiling for another 84 children like him who were participating in the project.

The range and number of children who require an assessment of pragmatics has increased greatly, with improved understanding of communication in autism spectrum conditions and spiralling caseloads of such children. The practitioner needs a practical format for observation or testing, which can be used with a variety of children with pragmatic communication needs from pre-school to adolescence and is not too time-consuming.

There are tests of pragmatics (for a review see Adams, 2002) and checklists of pragmatic behaviours (such as Andersen-Wood & Smith, 1997) but most of these were not suitable for the project. A strong contender for a

Figure 1 What is pragmatic language impairment (PLI)?

The literature describes children with pragmatic language impairment as verbose, fluent, over-literal, with expression often in advance of comprehension and difficulty constructing coherent narratives. It is evident from our research and others (Botting & Conti-Ramsden, 1999) that a proportion of children with pragmatic language impairment fit into traditional diagnostic categories such as high-functioning autism or Asperger's syndrome, but there remains some controversy over diagnostic issues.

pragmatics profile-type assessment was the Children's Communication Checklist-2 (CCC-2) (Bishop, 2003). This scale is derived from a series of teacher / parent-rated behaviours, and gives the practitioner a valid means – beyond that of professional opinion - of confirming the presence of a communication impairment. This is especially useful where a child functions at ceiling on language tests or cannot cooperate with formal testing. However, in addition to pragmatic behaviours

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it profiles other communication difficulties, and is not focused on providing detailed information for intervention planning.

The CCC-2 uses a reported observational method. Direct observational methods are usually felt to be more reliable but, with pragmatics, you generally find that the more structured the context, the less naturalistic and representative the assessment will be.

So, in 1989, Bishop & Adams tested a semi-structured task which sampled conversations between the child and the adult assessor. In this task, the assessor conversed with the child about specific topics, supported by pictures. Bishop and her colleagues further developed

this analysis into a conversational coding system, the Analysis of Language Impaired Children's Conversation (ALICC). In this the frequency and / or proportions of individual pragmatic behaviours, such as speech acts, turn clashes and cohesive devices, could be counted within a controlled sample (Bishop *et al.*, 2000). ALICC has the benefit of providing a concrete method of measurement within controlled samples and is a potential tool for evaluation of change, but it is prohibitively lengthy as a clinical measure. As it requires at least 6 hours of transcription and skilled analysis of a 10 minute sample, it is not in any way a feasible procedure for the clinician.

Real time

To translate ALICC into a clinical tool, the assessment ideally needed to be completed in real time. Realistically, coding of conversational turns needed to be simplified and guided by clinical examples rather than by lengthy training.

In our research study, the Social Communication Intervention Project (SCIP), based at the University of Manchester, we investigated the effects of an intensive speech and language intervention for 85 children with pragmatic language impairment. We wanted to have a direct observational measure of pragmatics in conversation to use as an outcome measure. There was a need, therefore, to come up with a short analysis of pragmatics in conversation. The new observation scheme, TOPICC (Targeted Observation of Pragmatics in Children's Conversation), was based on

ALICC and the sound principles of its research, and used an identical sampling method. This allowed us to:

- Incorporate the breadth of the ALICC scheme, looking not just at speech acts but also at responsiveness and information
- Use a short format observation scheme based on vulnerable areas of pragmatics
- Use an observational rather than transcription approach
- Embed aspects of interactional / interpersonal communication within the pragmatic categories.

We piloted the new scale with preliminary data from pre-intervention conversation assessments. Two experienced researchers independently coded recordings of our participants 'live', and discussed areas of agreement and difference. We then amended categories in the scale and produced descriptors for each aspect of pragmatic behaviour. We used this final revised version of TOPICC (available for free download at www.psych-sci.manchester.ac.uk/scip/) to analyse all 85 children's conversation data.

TOPICC consists of a single observation sheet with seven principal categories, some of which are broken down into separate items. Each item within the category is scored according to agreed observational guidelines, for which examples are available. The purpose of doing this is to derive a total score for TOPICC as well as sub-scores for separate categories. The rating scale is in figure 2.

Content validity of TOPICC had already been addressed by inclusion of categories from previous research found to be descriptive of pragmatic communication needs. Concurrent validity was addressed by comparing children's scores on TOPICC with their parents' ratings on CCC-2. In advance of this analysis, we matched each TOPICC item to the CCC-2 item(s) which best matched its description before the validity study started (figure 3). We then identified the 20 children in our participant group with the highest TOPICC scores – in other words, with the most notable difficulty with pragmatics in this context. We compared the rating on each of their three highest scored TOPICC items, scored at 2 or above, with the parent ratings of the corresponding items on CCC-2. This yielded 60 pragmatic behaviours in total. We then calculated the agreement between pragmatic behaviours observed as identifying need on TOPICC and the corresponding CCC-2 item. A CCC-2 item had to be rated at 2 or 3 to be considered problematic and in agreement with the observed TOPICC item. Across the 60 behaviours, there was very good agreement (88.3 per cent) between pragmatic behaviours identified as problematic on TOPICC and on CCC-2.

As a secondary outcome measure in the intervention project, we asked trained TOPICC raters to complete TOPICC coding and then to do a further task to confirm reliability. We asked them to give their overall impressions of change in conversation skills from the beginning to the end of intervention for those children who had received either

Figure 3 Examples of how TOPICC and CCC-2 items were matched in the concurrent validity study

TOPICC item	Corresponding CCC-2 item (no. on CCC-2 form)
Difficulties with topic maintenance	26 Moves the conversation to a favourite topic even if others don't seem interested in it
Giving too much detail and information	*42 Includes over-precise information AND 37 Tells people things they know already

*note that some TOPICC items have alternative corresponding CCC-2 items, in which case rating of both CCC-2 items at 2 or above was required to show agreement with TOPICC

intensive SCIP therapy or therapy as usual. All coding was completed blind to group status. In a sample of 50 children who have pragmatic language impairment, there was good agreement (80 per cent) between independent coders on opinion of change in conversational skills in TOPICC, showing reasonable reliability of overall impression of conversation change.

Charlie entered into the intervention arm of SCIP (Adams *et al.*, in preparation). At the beginning of therapy we used the TOPICC profile as a planning tool for intervention (figure 4). He then received intensive intervention of 20 specialist speech and language therapist sessions plus usual Learning Support Assistant input over 12 weeks. This was aimed at:

- enhancing his understanding of interlocutors' needs
- identifying topics and signalling topic change
- developing strategies to acknowledge when he doesn't understand and to ask for help
- developing metapragmatic skills of knowing how much to talk and when to allow the interlocutor to contribute
- understanding the thoughts and feelings of others by reading social signals, and the importance of this in peer interactions
- strengthening narrative ability via sequencing and narrative construction practice to enhance language-based interactions in social situations and in the classroom.

Charlie showed a strong response to therapy and at six months post-intervention his TOPICC profile had changed considerably

In addition, making inferences from words and short texts, supported by self-cuing strategies, provided a platform for word learning that transferred readily to class-based learning. Charlie showed a strong response to therapy and at six months post-intervention his TOPICC profile had changed considerably.

Figure 2 TOPICC rating scale

3	marked evidence of that behaviour across conversation; makes a marked impact on the interaction
2	makes a moderate but still significant impact on the interaction
1	is noticeable occasionally but makes only a slight impact on the interaction
0	is never observed and the behaviour is typical of mature interaction style

Having used TOPICC within SCIP and in our own clinical practice, we feel it has potential as a clinical observational instrument for profiling pragmatics and conversational skills in a wide range of children of school age who have pragmatic communication difficulties. Its main strengths seem to be that

1. it prompts observation of key characteristics of conversation likely to be significant in planning needs and support
2. it can be done in real time
3. to the experienced observer it is relatively easy to use the examples to guide coding.

It should be carefully noted that there are no normative data on TOPICC - and there probably never will be, because pragmatics is not amenable to standardisation. Reliability of observation and coding on TOPICC has yet to be tackled and may remain problematic without substantial funding for research studies. In the meantime, TOPICC may be a useful aide memoire for the practitioner attempting to profile pragmatics for individual children from a naturalistic sample. SLTP

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Acknowledgements and ethics

SCIP was funded by the Nuffield Foundation and sponsored by the University of Manchester. Thanks to Kirsty McBean (Queen Margaret University Edinburgh), Gillian Earl (NHS Lothian), Ruth Wadman and to all the children, families and schools who participated. The research was carried out in accordance with

Figure 4 TOPICC profile for Charlie pre-intervention showing indications for intervention

TOPICC OBSERVATION SCALE © Adams, Gaile, Freed & Lockton 2010

CHILD ID: <i>Charlie</i>	STIMULI USED: <i>Picture set 3</i>				ASSESSOR: <i>Gaile</i>
AGE: <i>8;4</i>	TOPICC protocol				DATE: <i>2009 Time 1</i>
CATEGORY	RATING				LINK TO INTERVENTION IN SCIP*
Reciprocity					
Difficulties initiating conversation	0 ✓	1	2	3	<i>Relative strength</i>
Difficulties responding to questions	0	1 ✓	2	3	
Child ignores speaker	0 ✓	1	2	3	
Taking account of listener knowledge					
Giving too much detail and information	0	1	2	3 ✓	<i>Understanding information requirements Understanding thoughts and feelings of others</i>
Giving too little information	0	1	2	3 ✓	
Turn taking					
Interrupts speaker frequently	0 ✓	1	2	3	<i>Relative strength</i>
Verbosity					
Child dominates conversation	0	1	2	3 ✓	<i>Metapragmatics and monitoring quality of talk in interaction</i>
Child uses too many questions	0	1	2 ✓	3	<i>Understanding information requirements</i>
Child provides unsolicited information	0	1	2	3 ✓	<i>Understanding thoughts and feelings of others</i>
Topic management					
Obsessional topics	0	1 ✓	2	3	<i>Topic management strategies</i>
Difficulties with topic maintenance	0	1	2	3 ✓	
Stereotyped or unusual language	0	1	2 ✓	3	<i>Monitoring information in talk; demonstrating effects of irrelevant language on conversation flow using sabotage methods</i>
Discourse style					
Proximity	0	1 ✓	2	3	
Overly formal	0	1 ✓	2	3	
Non verbal behaviours	0	1	2	3 ✓	<i>Eye gaze and meaning in interaction</i>
Response problems					
Comprehension limitation	0	1	2	3 ✓	<i>Comprehension monitoring</i>
Linguistic limitation	0 ✓	1	2	3	<i>Relative strength</i>

* These are main headings for aspects of intervention in the SCIP manual, which then specifies aims, methods and activities for each aspect in turn.

the NHS Research Governance Framework for Health and Social Care (NHS, 2005) and ethical permission was gained from the NHS Research Ethics Committee. Informed consent was gained from all participants and schools.

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Resources

• NHS Research Governance Framework for Health and Social Care, see www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4108962
 • Further information about SCIP and the full TOPICC form (with definitions) are available free at www.psych-sci.manchester.ac.uk/scip/.

REFLECTIONS

- DO I CONTRIBUTE TO THE DIALOGUE BETWEEN RESEARCHERS AND PRACTITIONERS?
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- DO I OFFER SUFFICIENT HOURS OF THERAPY TO BRING ABOUT CHANGE?

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