Mapping of Applied Behaviour Analysis Principles and Methods onto the Secret Agent Society Program

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What is the Secret Agent Society Program (SAS)?

Program Overview

The Secret Agent Society Program (SAS) is an exciting and engaging intervention that uses the methods and principles of applied behaviour analysis (ABA) and cognitive behaviour therapy (CBT). The evidence-based group program aims to improve the emotion recognition, emotion regulation and social skills of 8-12 year old children with High-Functioning Autism Spectrum Disorders (HFASDs), including Asperger Syndrome.

SAS is designed to meet the highly-specialised needs of children with HFASDs by teaching them:

- How to recognise simple and complex emotions in themselves and others.
- How to express feelings in appropriate ways.
- How to cope with feelings of anger and anxiety.
- How to start, continue and end conversations and play activities with others.
- How to tell the difference between friendly joking and mean teasing.
- How to manage bullying.
- How to cope with making mistakes.
- How to handle new situations and ask for help when needed.

The group program uses a multi-level computer game, small group child therapy sessions (with individualized support provided as needed), parent training sessions and teacher tipsheets to promote collaborative working relationships between children, parents, school staff and other professionals, and to promote the generalization of children's social skills to real-world environments.

Evidence Base

A randomised-controlled trial has shown that children who participated in the Secret Agent Society (SAS) Program showed greater improvements in social and emotion management skills at home and at school than children who received treatment as usual during the intervention period. The social skills of 76% of children who participated in the program improved to within the range of typically developing peers based on parent-report measures. Research has also shown that these improvements were maintained five months after the program ended.

Additional trials of the SAS Program (formerly the Junior Detective Training Program) are scheduled to occur with the following groups of children, in both clinical and school settings:

▶ Children with Autism Spectrum Disorders

▶ Children with Attention Deficit Hyperactivity Disorder

▶ Children with anxiety disorders

▶ Typically developing children

Please see the SAS Training Information Pack for further information on the program content, resources, and practitioner training.

What is Applied Behaviour Analysis (ABA)?

Applied Behaviour Analysis (ABA) systematically applies behaviour therapy principles to improve behaviour, while experimentally evaluating the effectiveness of intervention components. Intensive Behavioural Intervention (IBI) programs for children with ASDs are internationally recognized for their treatment effectiveness and empirical support. ABA methods can help children with ASDs to replace inappropriate behaviours with more appropriate alternatives and to generalize these new skills across settings.

Principles

ABA is an individualised and data driven intervention process stemming from the theory of Behaviour Therapy. The core principles of ABA programs include:

▶ Systematic delivery of programs with clear intervention steps and guidelines

▶ Direct observation and measurement of behaviour

▶ Data collection and analysis, including an evaluation system to monitor the effects of the intervention

▶ Structured goal setting with a clear definition of target behaviours and meaningful behavioural objectives

▶ Tasks broken down into smaller components and a hierarchical approach to learning

▶ Procedures to transfer and generalize skills out of the teaching environment

Teaching Methods and Techniques

Intervention programs based on ABA principles involve the implementation of specific teaching techniques such as:

▶ Understanding and optimization of the individual's *motivation* to act or learn

▶ *Task Analysis* to break down learning into steps and *chaining* for graduated learning

▶ *Discrete Trial Instruction (DTI)* and *Discrete Trial Training (DTT)* in various forms

- ▶ Using effective *reinforcement* strategies that influence behaviour
- ▶ *Shaping* techniques to enhance skills over time
- ▶ *Modeling* and *prompting* for errorless learning and *fading* for increased competence

ABA-based programs for ASDs most commonly begin as intensive (20-40 hours per week) early intervention for children with autism under 6 years of age. However, ABA-based intervention programs can be used with students of every age and can be applied to a variety of settings. The principles of ABA can be used in various forms of intervention for various ages, various degrees of ASD symptomatology, and for targeting very specific behaviours or for developing broader and more complex skills such as emotion regulation and social skills. One of the difficulties with IBI and programs applying ABA principles has been the lack of resources for children over 6 years of age. The Secret Agent Society (SAS) Program is an innovative, evidence-based intervention that addresses these social and emotional challenges in older children.

How does SAS implement and align with the core principles of ABA?

SAS is an engaging evidenced-based intervention package that improves emotional understanding and social skills through the application of ABA and CBT principles.

Principles

- ▶ ***Systematic delivery of programs with clear intervention steps and guidelines***

SAS is a manualized program with clear detailed instructions and corresponding user-friendly manuals, workbooks and tipsheets for practitioners, parents, teachers, school support staff and children. Skills are broken down into their constituent parts and taught in individual or 'discrete' steps that are clearly outlined in the program resources. To ensure treatment fidelity, practitioners must be trained by the Social Skills Training Institute to deliver the program and have prior experience working in the ASD field.

- ▶ ***Direct observation and measurement of behaviour, data collection and analysis, including an evaluation system to monitor the effects of the intervention***

Multiple assessment measures are used to initially assess children's social skills profile for treatment planning purposes and to evaluate their progress throughout the program and at three- and six-months follow-up. These include validated and reliable child competency measures, parent and teacher-report social skill questionnaires, an observational assessment of the child (ideally conducted in the classroom and playground at school) and a home-school diary that is used to track skill usage at home and at school on a daily basis.

▶ **Structured goal setting with clear definition of target behaviours and meaningful behavioural objectives**

The SAS program content was determined based on a review of contemporary scientific literature examining the specific social skill deficits that are most common in primary-school aged children with HFASDs, and those that cause this population the most distress and impairment. Each skill is broken down into clearly specified behavioural steps and objectives. Core and progressive target skills for each session are clearly described in the program resources.

A clear definition of the weekly target behaviour(s) for the home-school diary is collaboratively developed by the child, program facilitator(s), parent(s) and teacher. This definition is written at the top of the diary to ensure consistency across parties in monitoring and the provision of rewards (see Appendix for example). Children have increasingly more input into choosing the home-school diary target behaviours as their insight into their social and emotional difficulties increases. This builds on their intrinsic motivation to learn skills that they consider to be most personally relevant.

▶ *Tasks broken down into smaller components and hierarchical learning*

The SAS Program employs a hierarchical approach to social skill development. Each social skill is broken down into its consistent steps, and skills taught later in the program build on those introduced, practised and mastered earlier in the program. For example, the 'Play Code' steps (featured in the Appendix), integrate and build on the emotion recognition, emotion regulation and conversation skills that children learn earlier in the program.

The Secret Agent Society Computer Game is also structured in a hierarchical manner, whereby higher levels of the game build on and extend skills taught in lower levels. For example, the user learns how to recognise emotions in others from face, voice and body clues in Level 1. In Level 2, they are taught how to detect emotions in themselves from physiological 'body clues' and thoughts, and they learn how to integrate face, voice, body and situational clues to detect how someone else is feeling. In level 3, the user applies the skills from Levels 1 and 2 to detect how their character and other characters feel in a series of 'virtual reality missions', and to decide how their character will cope with unpleasant emotions and respond to social challenges (e.g. bullying and teasing).

▶ *Procedures to transfer and generalize skills out of the teaching environment*

To assist children in generalizing skills from the SAS program to everyday contexts, the following program components are included:
- Weekly 'home missions' that give children practice at using the skills they are learning in the program in home and school settings. Children record their progress on these missions in either a computerized or paper and pencil 'Secret Agent Journal'.
- The home-school diary, which monitors children's use of target skills on a daily basis at home and at school, and is linked to a rewards system.
- Weekly parent information sessions and the parent workbook, which help parents learn how they can support their child to generalize skills to the home environment.

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- Weekly teacher tip sheets and intermittent teacher contact to help teachers support children's skill usage at school.
- The inclusion of visual supports (e.g. pocket-sized full-colour skill code cards) to remind children to use their social skills in real-world contexts.

How does SAS implement ABA methods and teaching techniques?

▶ *Motivation*   The SAS program adopts a strengths-based approach and engages children with ASDs via common areas of special interest. For example, the program:
- is based on the concept of training as a cadet secret agent
- uses a full-colour Cadet Handbook to illustrate skill steps both verbally and visually, minimizing the need for writing and catering for different learning styles
- uses full-colour pocket-sized 'Code Cards' to illustrate skill steps, which children love to collect
- includes a four level animated computer game
- features a range of other fun active games and activities to teach social-emotional skills, including a walkie-talkie game, board game, card games and a helpful thought missile foam darts game
- employs an individualized reward system to encourage skill acquisition, which is tailored to each child's area(s) of special interest(s).

▶ *Reinforcement*   A variety of immediate and intermittent reinforcement schedules are used within the program. Children are involved in choosing their own rewards for skill usage both within and between sessions.

Tokens, verbal praise and differential attention are used as immediate reinforcers within session, and tokens are exchanged for a tangible reward at the end of each session. Some of the in-session rewards are provided in the program materials (e.g. a stressball and medal included in children's 'Gadget Packs').

Within the Secret Agent Society Computer Game, the user receives verbal praise for correctly answering items, and they are awarded secret agent gadgets and ranking promotions as they progress through the program.

Home-school diary points that are awarded when children use target skills from the program at home and at school are exchanged for items on a home-based 'rewards menu'. This menu is collaboratively created by parents and children, with the task demands required for children to

earn diary points and rewards gradually increasing as their social skills develop. Parents and teachers are encouraged to prompt, praise and reward children for using their social skills in real life.

▶ *Discrete Trial Instruction (DTI) and Discrete Trial Teaching (DTT)*	The SAS program implements both one-to-one and group adaptations of DTT/DTI. The program predominantly implements an advanced style DTT/DTI using a combination of immediate and intermittent reinforcement in a group format. Skilled SAS facilitators integrate one-on-one DDT/DDI with specific instructions and reinforcement provided as needed to support individual differences in learning and skill level. For example, a facilitator may work individually with a child within the group context to help them to use their face and body to express a target emotion with the aide of a mirror and/or video camera as needed.

Activities within the computer game also use interactive prompts and reinforcement to aide learning. For example, when the user answers an item incorrectly, they are given a hint by their mentor special agent in the game, and further corrective feedback is provided by the mentor if necessary.

A discrete trial teaching approach is also employed in home and school settings. Parents and teachers are encouraged to prompt children to use their social skills as needed, and to reward their skill usage with praise, home-school diary points and back-up rewards. |
| ▶ *Shaping* | Within the program, children develop social skills through a systemised shaping process both within and across group sessions that aims to improve their competence and confidence in recognising and managing their feelings and getting along with others.

For example, role-play is often used in session to help children practise target social and emotional skills. After a child has role-played a skill, they are prompted to self-evaluate their performance, with additional feedback provided by the facilitator(s) and other group members as needed. Children then practise the target skill again, implementing the feedback to shape-up their behaviour within and across sessions. |
| ▶ *Prompts and Fading* | A variety of prompts is used throughout the SAS Program to support errorless learning. These prompts are gradually faded out as skills are mastered to increase independence. Parent information sessions and parent, teacher and child resources are used to ensure consistent use of prompts across different settings.

Multimodal prompts used in the SAS Program include:
- verbal (e.g. narration of computer game instructions to cater for children with reading difficulties, acronyms and reminders given by |

group facilitators, parents, teachers and peers for children to use their skills)

- visual (e.g. full-colour Cadet Handbook showing illustrations of skills, gestural signs to use specific skills and pocket-sized Code Cards featuring pictures of skill steps)
- textual prompts (e.g. text in the Cadet Handbook, on skill Code Cards and written instructions in the computer game)

▶ *Modelling*   As children with ASDs often learn best when information is presented visually, via a technological medium, and in a context where minimal social demands are placed on them (e.g. individual versus group therapy), the emotion recognition, emotion regulation and social skills taught within the SAS Program are initially modelled by the 'hero' character in the computer game prior to child group therapy sessions. These social skills are subsequently modelled and practised by children's program facilitators, other children and themselves in the weekly sessions, and by their parents, siblings, teachers and peer mentors to support skill generalization to home and school settings.

After children practise skills in session and in real life, they are taught and supported to self-evaluate what they did well, and what they could improve on to encourage self-awareness and ongoing skill development.

▶ *Task Analysis and Chaining*   Within the SAS Program, step by step guidelines are taught for each social skill both within and across sessions. To start with, children are encouraged to just focus on one to two steps of a target skill, with subsequent steps added as the skill is mastered.

As described in the *'tasks broken down into smaller components'* section on page 6, skills taught later in the program incorporate and build on those introduced and rehearsed earlier on.

For further information about the Secret Agent Society Program, please refer to the Training Information Pack, or contact the Social Skills Training Institute:

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APPENDIX A

Example of a Home-School Diary and Skill Code (The Play Code)

SECRET agent SOCIETY
Home-School Diary

Child's name: Rachell
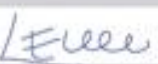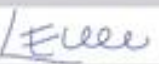**Week beginning (date):** 27/04/2010

Target behaviour(s):

Detecting how other people feel from face, voice and body clues

Instructions:

At the end of each school day, teachers are to review with the child the target behaviours they have demonstrated. Initially, award one point each time the child uses a target skill (based on their self-report and observed behaviour). Parents can also award points when children display target skills at home. Points are exchanged for home-based rewards. As skills are mastered, points can be awarded less often.

Number of points needed to earn daily reward:
(determined by parents in consultation with teacher) **2**

	Monday	Tuesday	Wednesday
Points earned at school	1	2	1
Teacher comments	Noticed that a peer got frustrated with her when she wasn't listening during a group activity	Noticed when she offended a classmate	
Teacher's signature	x K Smle	x K Smle	x K Smle
Points earned at home	1	1	2
Total daily points earned (school + home)	2	3	3
Points spent on reward(s)	2	2	2
Points carried over + those awarded after tally time	Bonus points: 1	Bonus points: 1+1=2	Bonus points: 2+1=3
Parent's signature	x Eveee	x Eveee	x Eveee

Points will be tallied each day at: **6.00** pm
- Points carried over are to be counted towards bonus rewards, not daily rewards.
- Points earned after the daily tally time go towards bonus rewards.
- Bonus rewards can only be claimed on days where the daily points target is reached.

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STEP 1

Check that it's a good time and place to go up to someone.

Try to WAIT until there's a pause in what they are doing or saying so that you don't interrupt.

STEP 2

Hi!

Walk up to them, smile and say hello.

Remember to stand an arm's length away and look at their face and eyes at least half the time when you're talking. Try not to stare, though!

STEP 3

Is it OK if I play with you?

Using a calm, friendly voice, ask if you can play with them, or if they would like to play with you.

If you're asking someone to play with you, try to choose a game that THEY'LL enjoy, even if it's not your favourite. This shows the person that you care about them, and they're more likely to say yes!

If they say YES:

Try to remember to take turns and share.

Try not to be on Rule Patrol!

If you tell other kids what to do, they're likely to get upset and not want to play with you.

Everyone loses sometimes. Having fun is what counts!

Watch out for angry and anxious body clues. If you detect them, use your helpful thought missiles and relaxation gadgets to calm down.

Thanks for letting me join in. You both played really well.

When the game ends, thank them for playing with you. Congratulate them on playing well and/or winning. If you don't want to play with them anymore, make an excuse that you have something else you need to do. Telling them that you're bored playing with them or that you don't like playing with them is likely to upset them.

I'm angry because you won't kick the ball to me. I'm going to hang out in the library.

If someone really upsets you, calmly use an "I" statement to explain that you need some 'chill-out' time.

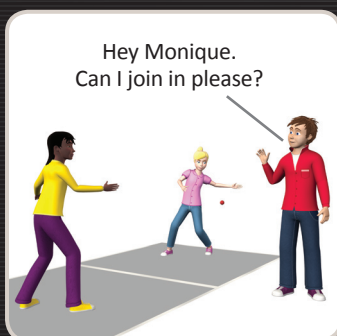I feel/I'm _____ because _____.

I'm going to _____.

▶ ▶ ▶

If they say NO:

Shoot down any unhelpful thoughts with helpful thought missiles.

Everyone hates me.

HELPFUL THOUGHT

Some kids are nice to me.

Oh, OK then. Have I done something to upset you?

Ask why you can't play, or if you've done something to upset them.

Hey Monique. Can I join in please?

Ask someone else if you can play with them...

OR

LIBRARY

Do a fun activity on your own.

CAUTION! Following the Play Code makes it more likely that other kids will play with you, but it doesn't guarantee it. Have a back-up plan ready in case they say no!

Also, try to make friends with a few kids that you can play with. If you try to hang out with the same kids all the time, they may find this annoying.

Watch your group mentor(s) demonstrate the Play Code steps with volunteers from the group.