BISHOP GROSSETESTE UNIVERSITY

Beat it!

USING EVERYDAY MUSIC ACTIVITIES TO SUPPORT COMMUNICATION

About me

Senior Lecturer in Special Educational Needs, Disability and Inclusion

Trustee of Soundlincs Music Charity

Previously:

- Lecturer at Linkage – Music for Communication
- Music Facilitator

NB> NOT music therapist or Speech and language therapist

This session

Music and communication: what's the connection?

Beat – finding the heart of music and speech

Rhythm – supporting words through music games and songs

Singing for speech

‘More than anything else, rhythm and harmony find their way into the inmost soul and take strongest hold upon it‘, Plato.

Early musical and verbal learning 1

- Learning begins in the womb
- The newborn already knows:
  - The rhythm and melody of its language
  - Songs
- They have felt:
  - Mum’s heartbeat
  - Movements
  - Mum’s emotional responses to music

Early musical and verbal learning 2

- Infant-directed speech and song
  - Emphasises speech sounds
  - Emphasises rhythm
  - Helps baby pick out words and phrases
- Babies prefer:
  - Infant directed speech to adult speech
  - Infant directed song to speech
- Music and song
  - Helps their energy and emotional levels

Music and verbal communication: what's the connection?

WHAT OTHER ANIMALS CAN MOVE TO A BEAT?

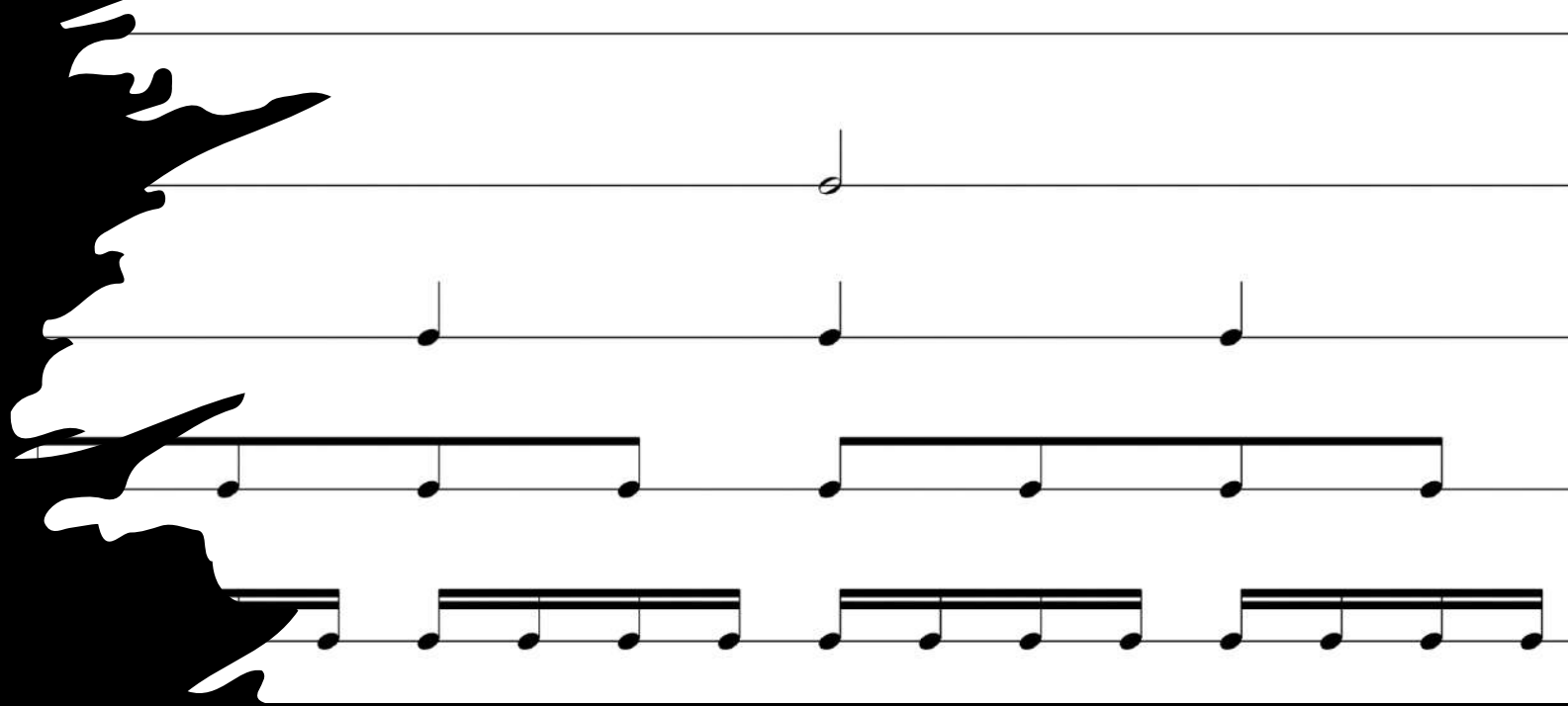
Entrainment to the beat:
the heart of music,
and verbal learning

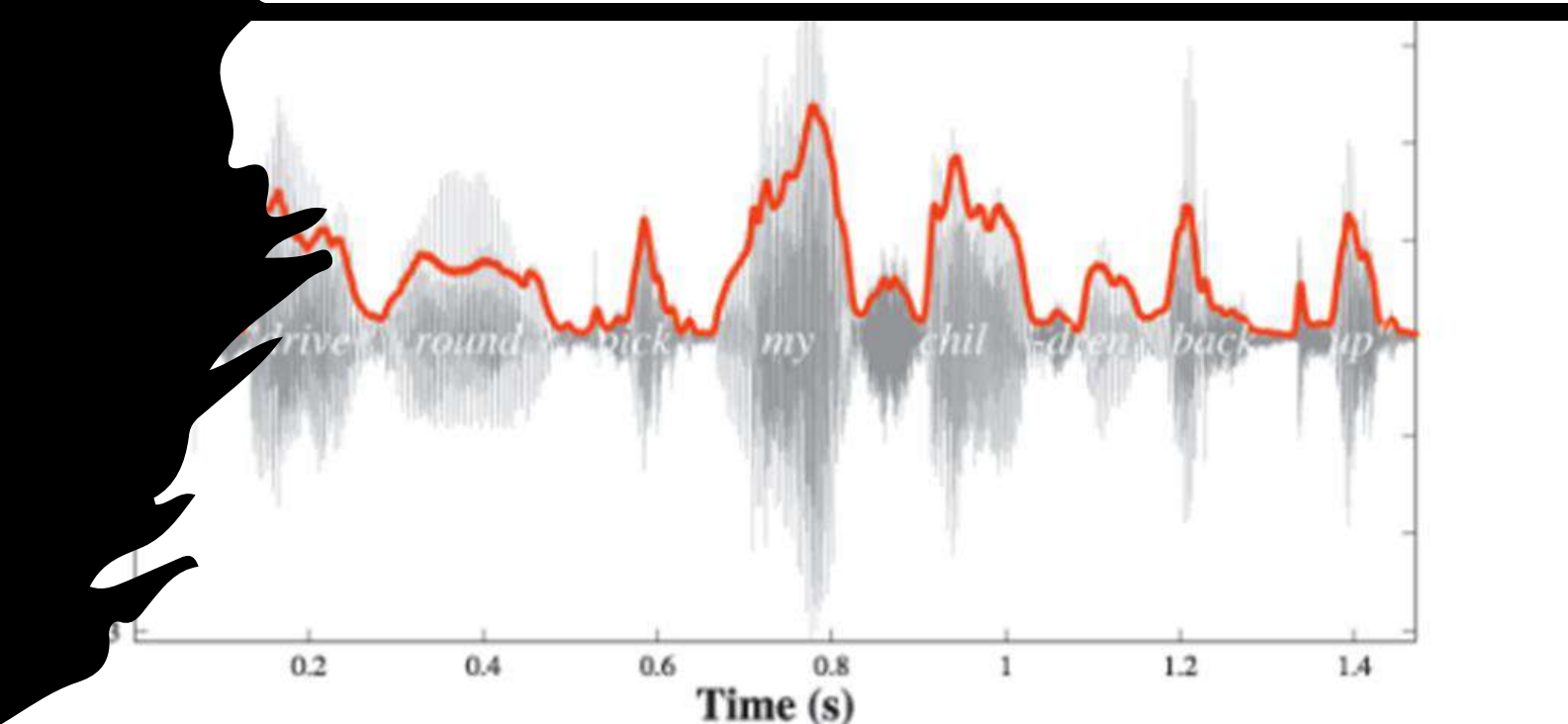
Entrainment – social, emotional, cognitive, sensory

Timing is critical

for music and speech

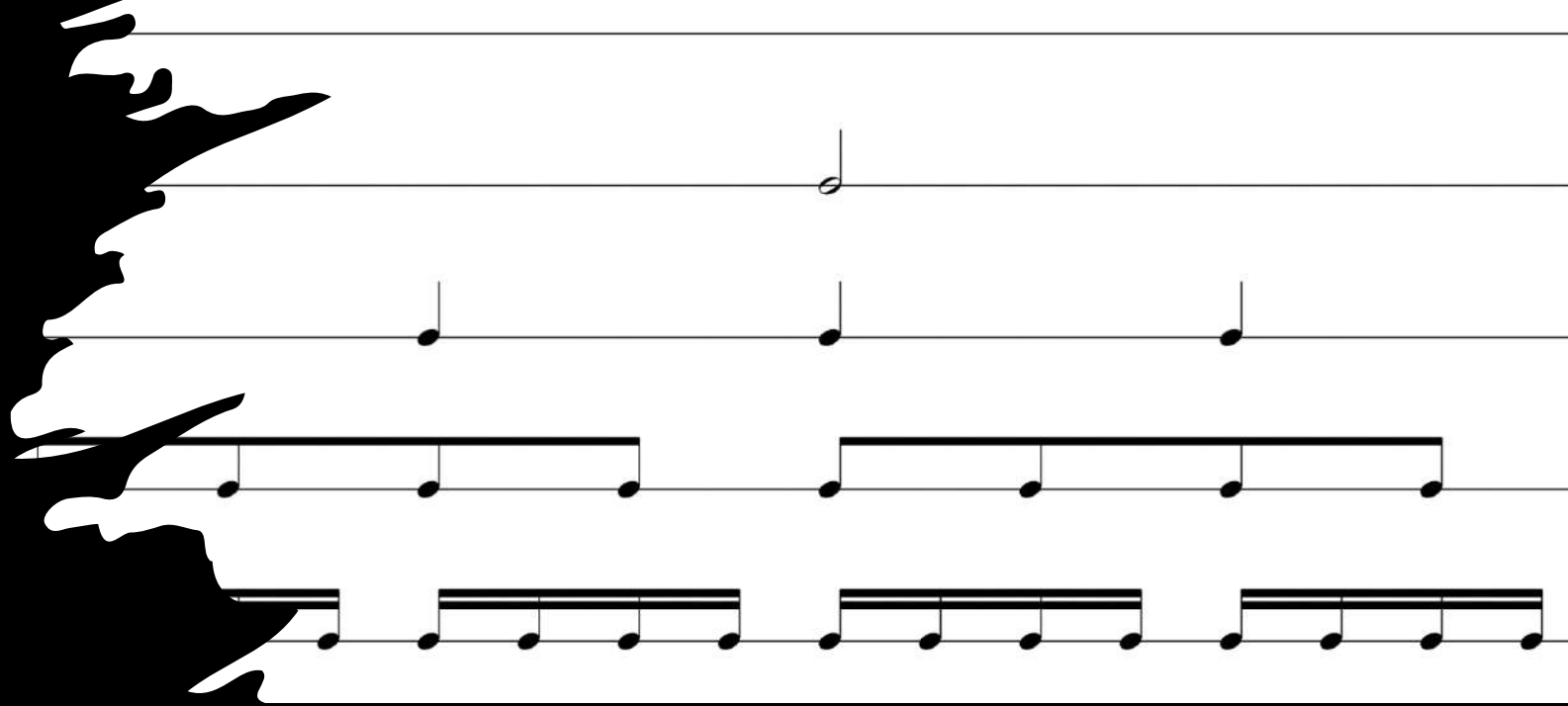
Music and speech use the SAME perceptual skills

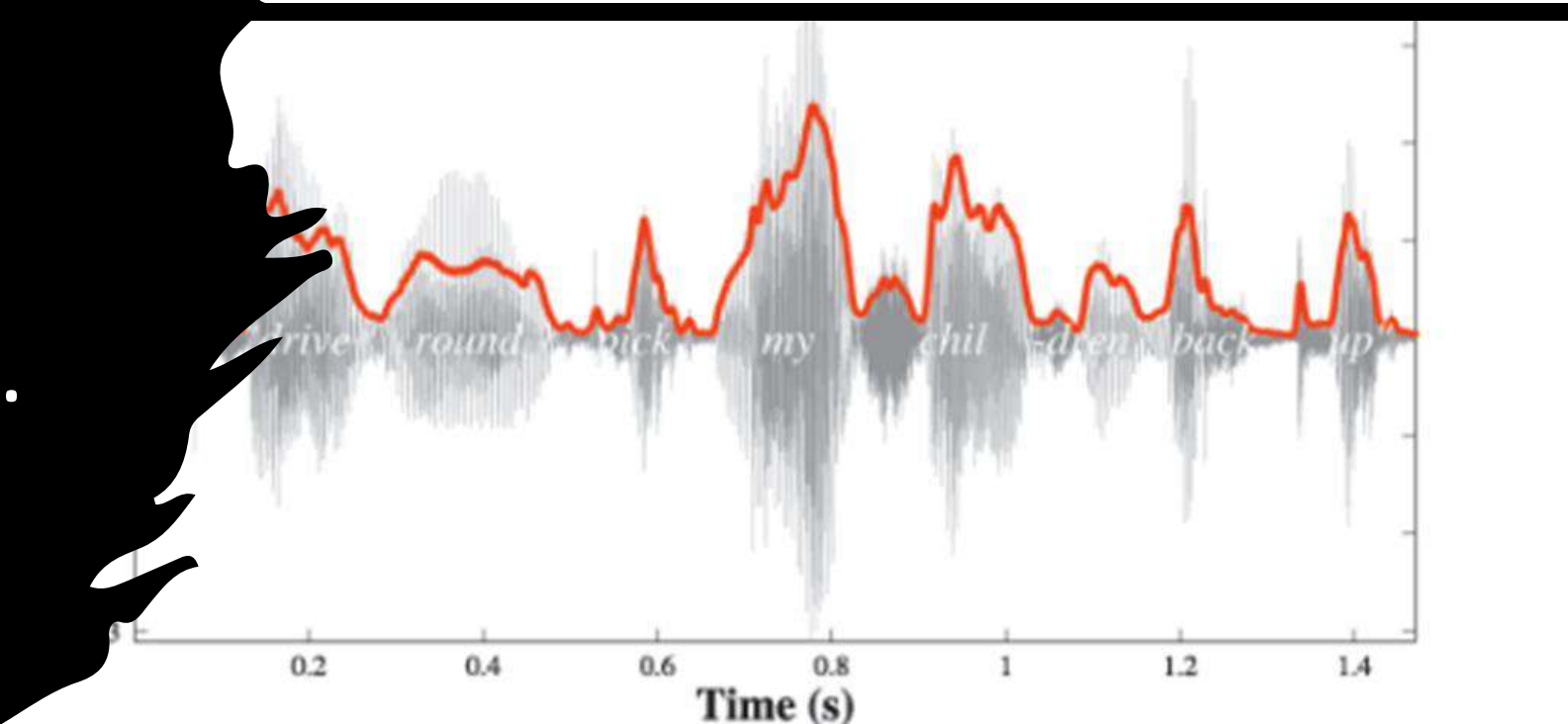




Music and speech use the SAME perceptual skills

But *making* music…





Making music places higher demands
e.g.

Clap along with me

Beat Entrainment

These are the skills you used

- Temporarily store sounds in auditory memory
- Form a temporal template

AUDITORY MEMORY (in WORKING MEMORY)					
TIME					
SLOW	x				x
MEDIUM	x		x		x
FAST	x	x	x	x	x

Beat Entrainment

These are the skills you used

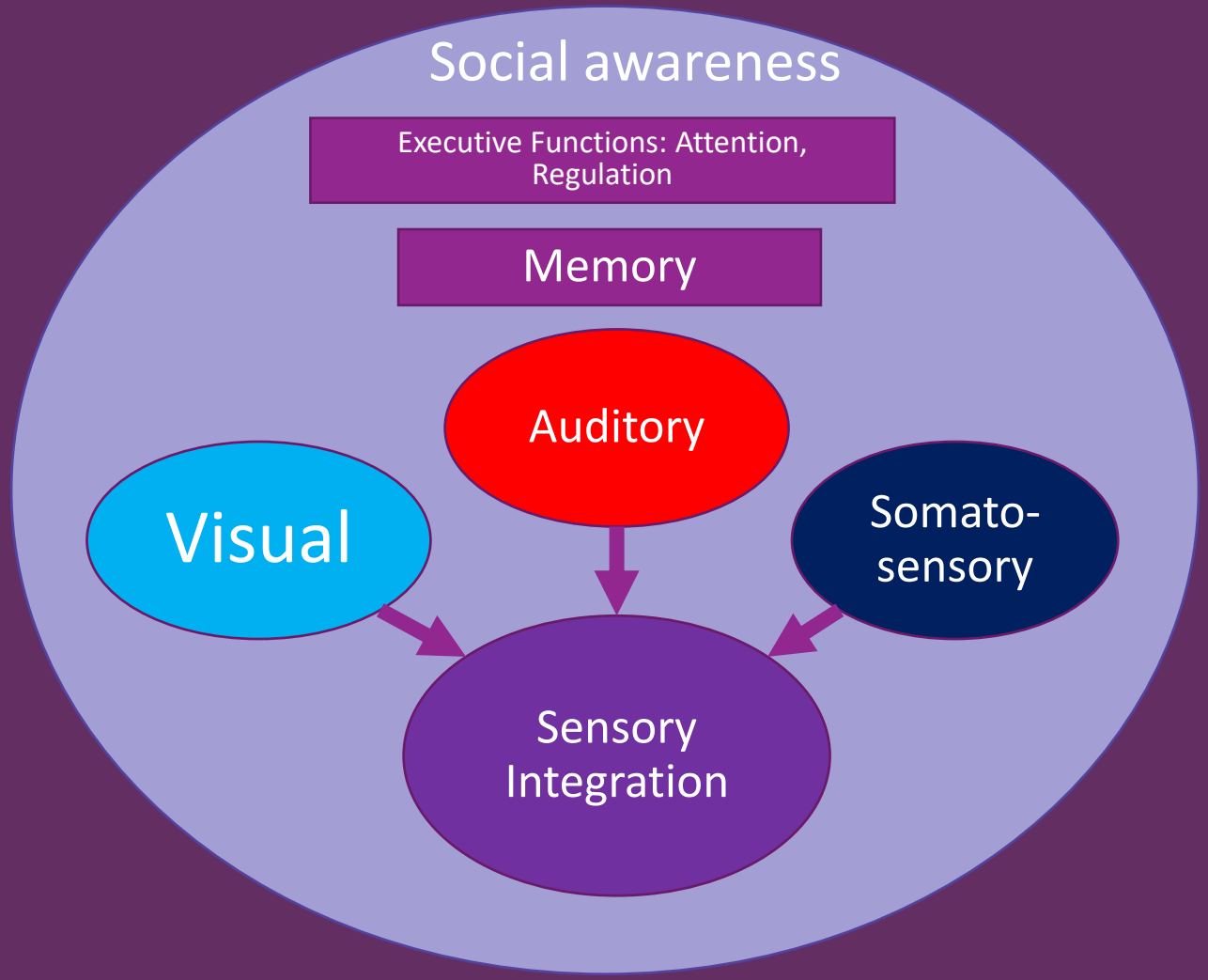
- Temporarily store sounds in auditory memory
- Form a temporal template
- Instruct your hands to move
- Synchronise
  - monitor whether your clap coincided with the beat – feedback from body and ears
  - ongoing monitoring and attention: do you need to adjust?
- Filter out of other distractions

Assuming you could :

- hear the signal; and
- perceive and process the signal as it was intended!

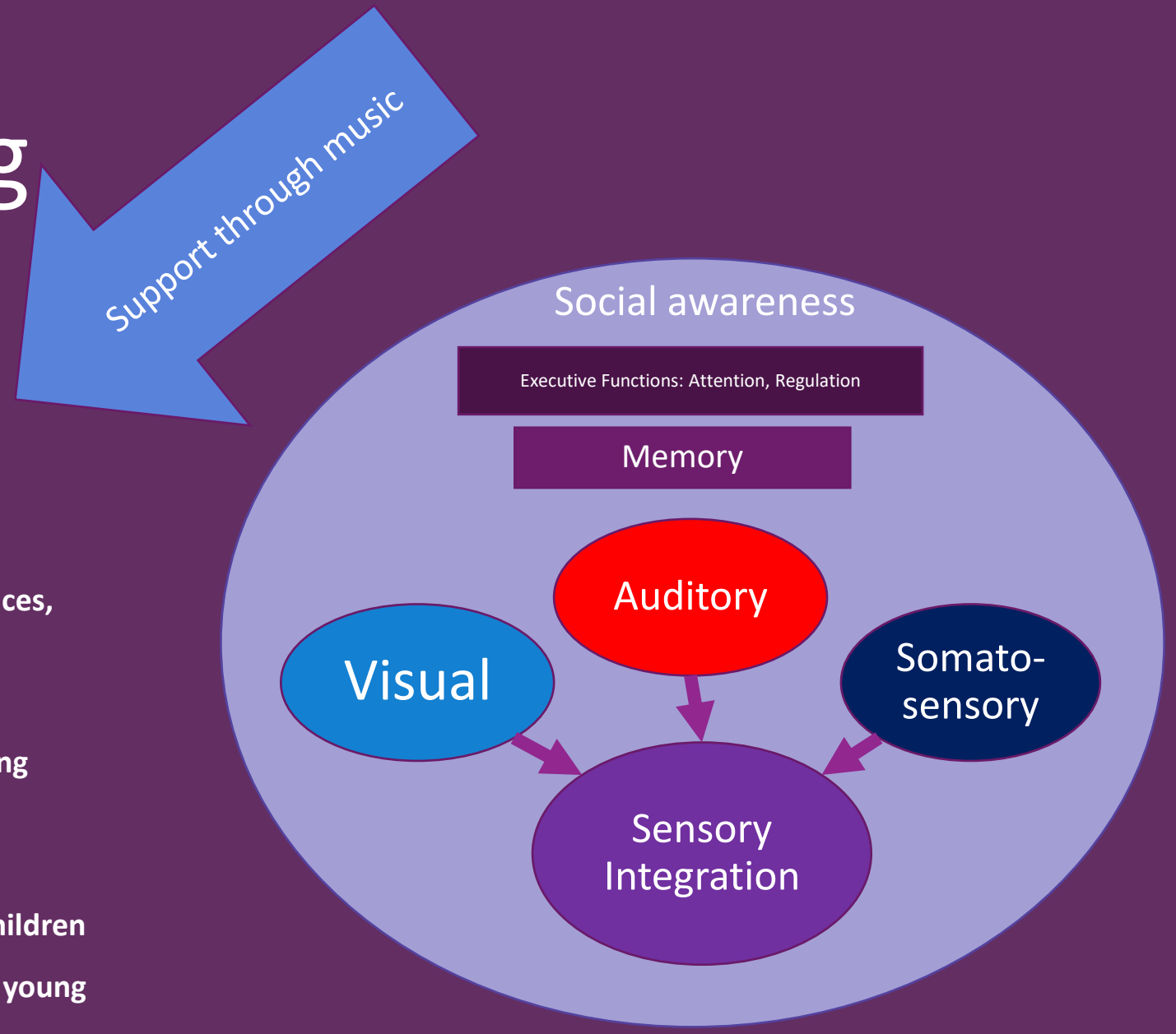
Making music

- Tapping to the beat
- Dancing
- Singing
- Playing an instrument



Skills for making music

- Social awareness – **Autism, ADHD, Fragile X**
- Auditory perception – **hearing loss**
- Sensory processing – **Dyspraxia, Physical differences, Autism ADHD, Dyslexia**
- Sensory integration - **Autism**
- Auditory-verbal memory – **Down Syndrome, young children**
- Attention and focus –**ADHD**
- Self-awareness and monitoring – **ADHD/young children**
- Motor coordination – **Dyspraxia, ADHD, Autism, young children, people with physical disabilities**



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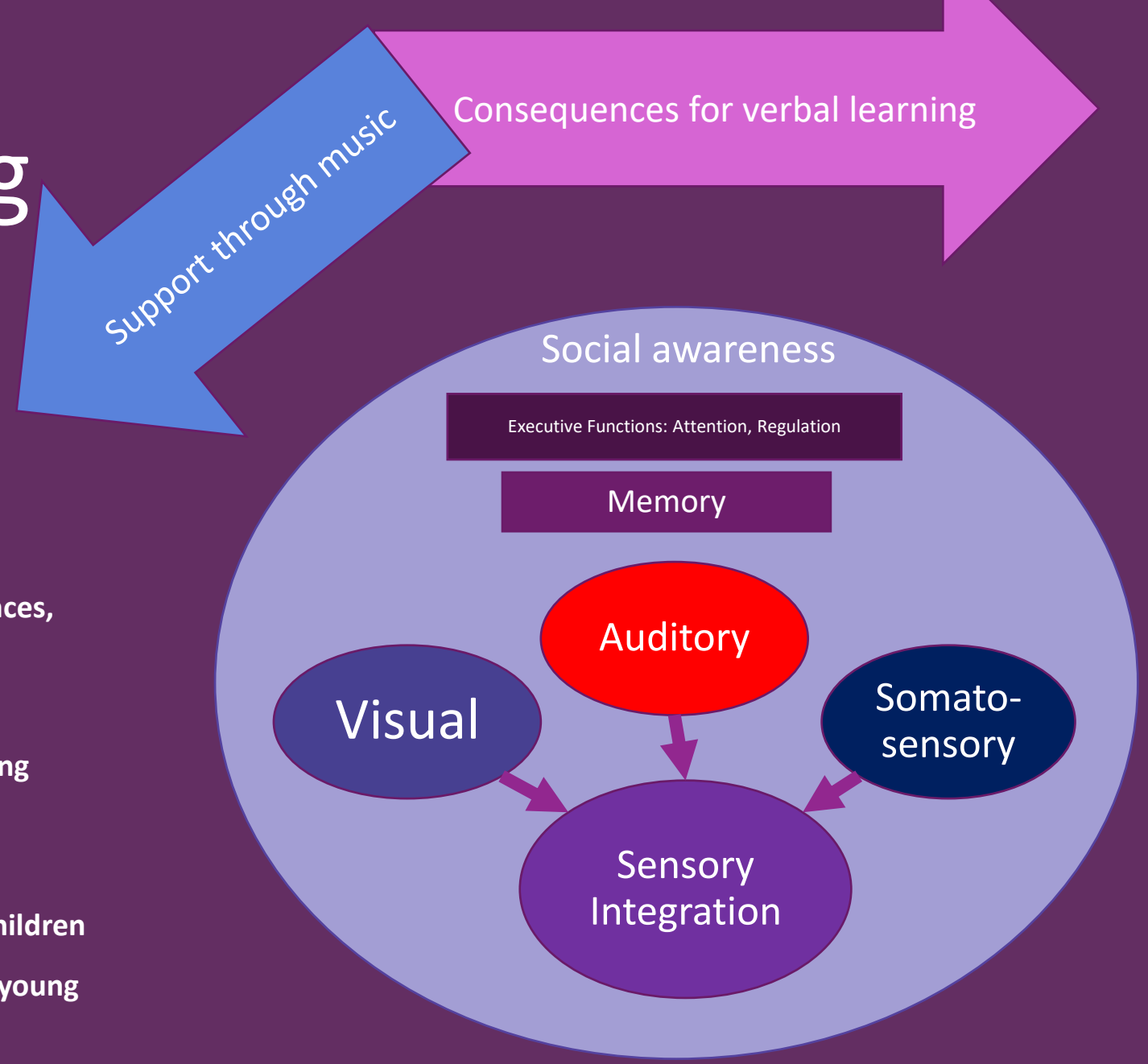


Small beginnings: Case Study of N

- 9 year old with autism and developmental delay, sound-sensitive
- Communicates nonverbally- touch, gesture, PECS; wears ear defenders
- 6 weeks music activities:
  - Took time to settle (3 weeks)
  - Enjoyed nonverbal interaction in singing games – puppets; clear prompts to take turns/interact
  - Week 4: active in sessions: vocalising/speaking in songs; filling gaps in songs; conducting the group

‘it was new for N to want to be involved in group activities’

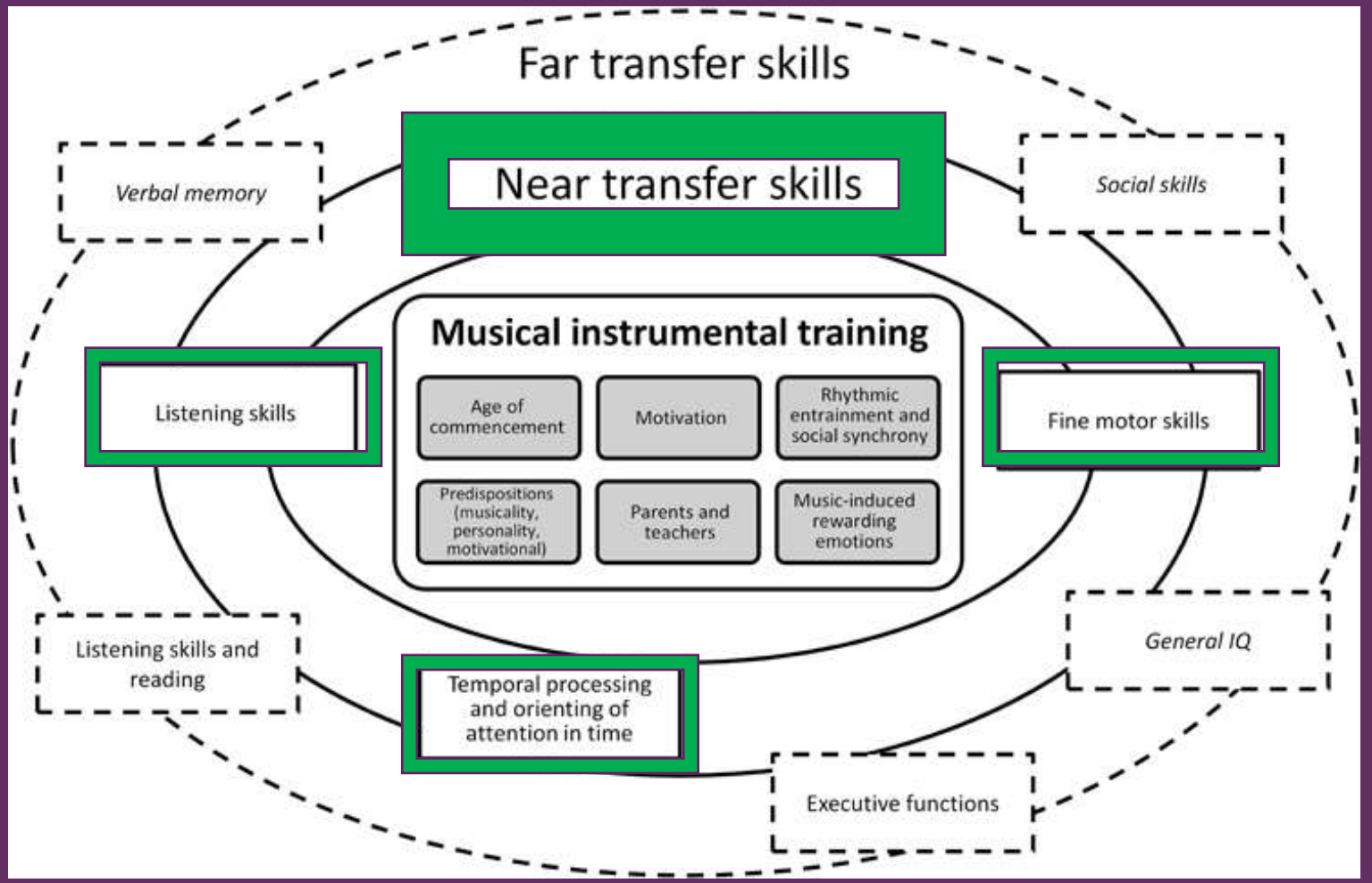
Evidence of transfer to verbal learning: examples from experimental studies

Authors	Condition	Groups	Outcomes
Francois et al. (2012)	Music vs. Art Kodaly music classes	8 year old TD children; French-speaking; 2 years music vs. art	Enhanced processing speed; better discrimination of syllables
Tierney et al. (2014)	Community Music vs. Army	Teenagers (average 14 years) (USA)	Faster brainstem response; better phonological skills (music)
Przybylski et al. (2013)	Phrase priming	9 year-olds with SLI; and TD controls; French speaking	Enhanced grammatical understanding (both groups)
Bhide et al. (2013)	Synchronising to beat: marching, clapping, chanting, bongos)	6-7 year old poor readers	Improved reading – in line with improved motor skills
Flaugnacco et al. (2015)	Music (Kodaly, Orff) vs. painting	Italian children 8-11 year-olds with dyslexia; randomized trial	Music group improved in reading accuracy; phonemic blending; working memory
Bouloukou et al. (2021)	Rhythm music activities (Kodaly, Orff)	Greek children with dyslexia, aged 8-9 years	Word recognition, grammar, spelling, rhythm

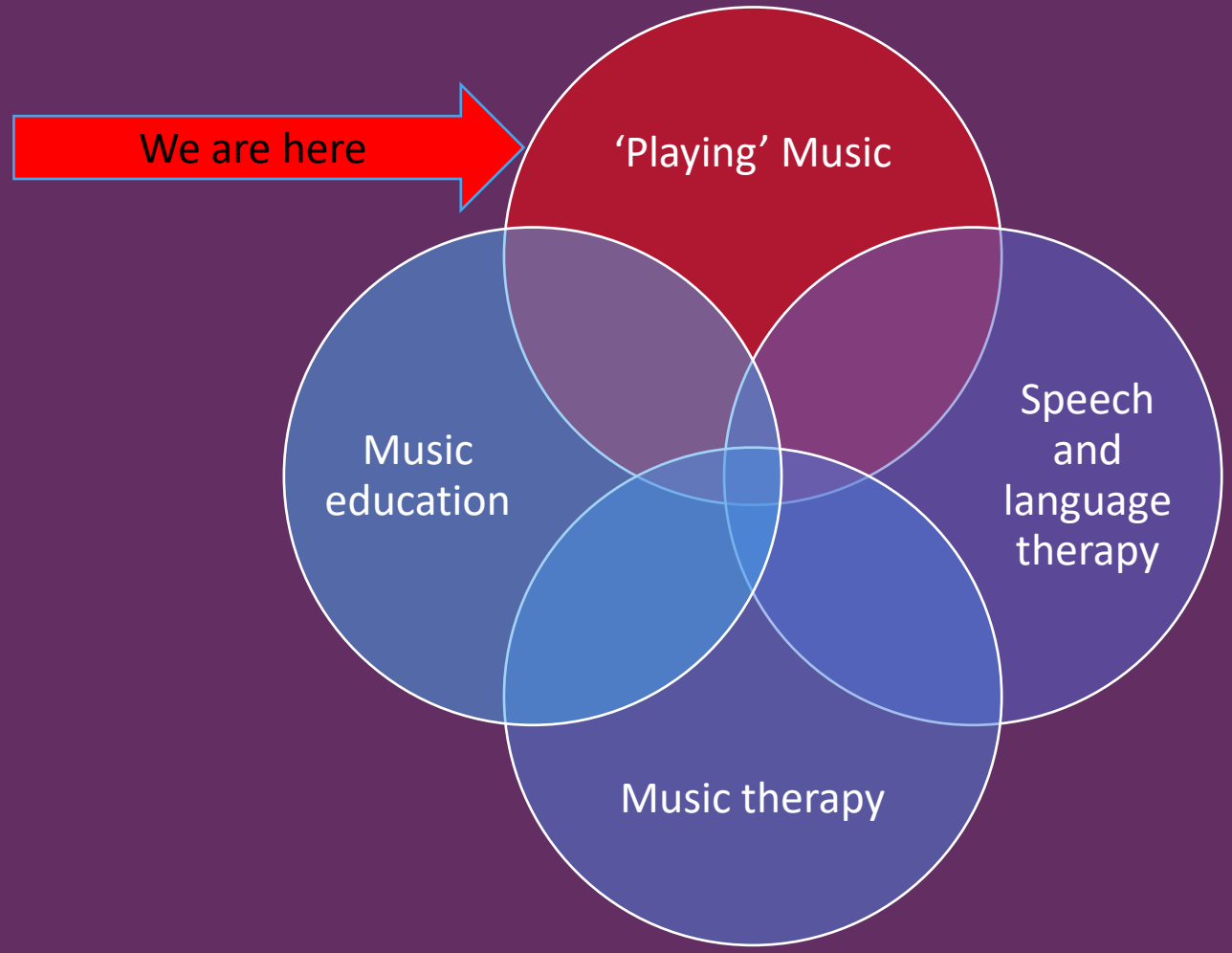
How far might music training go?

Miendlarewska and Trost (2014)

Miendlarzewska, E.A. & Trost, W.J. (2014). How musical training affects cognitive development: rhythm, reward and other modularing variables, Frontiers of Neuroscience, 20(7), 279. doi: 10.3389/fnins.2013.00279



Using *everyday* music activities



Music and social communication: Sounds of Intent

Musical turntaking

- Tyrone https://vimeo.com/23487431
- Shafiq P3D https://vimeo.com/23485655

Vocal turntaking

- Shafiq I2B https://vimeo.com/23485670
- A i3B https://vimeo.com/23483888

Using beat timing to support speech 1

What you can do

- Move to music – bounce, jump, rock

Why?

- Babies, children and adults hear the beat best if they have moved to it
- Moving to the beat can help the vestibular system, especially in people with hearing loss
- Music makes us feel good!

Using beat timing to support speech 2

What you can do

1. Play drums/junk percussion 1:1
2. Use different speeds to drum or clap to
3. Encourage accuracy – use their ‘best’ speed
4. Tell them/show them when they have got it right and what to do differently
5. Use visual, tactile, technological aids – e.g. tap the beat on their body; use an app
6. Make it physical – walk/tap/flap; bounce balls; throw beanbags

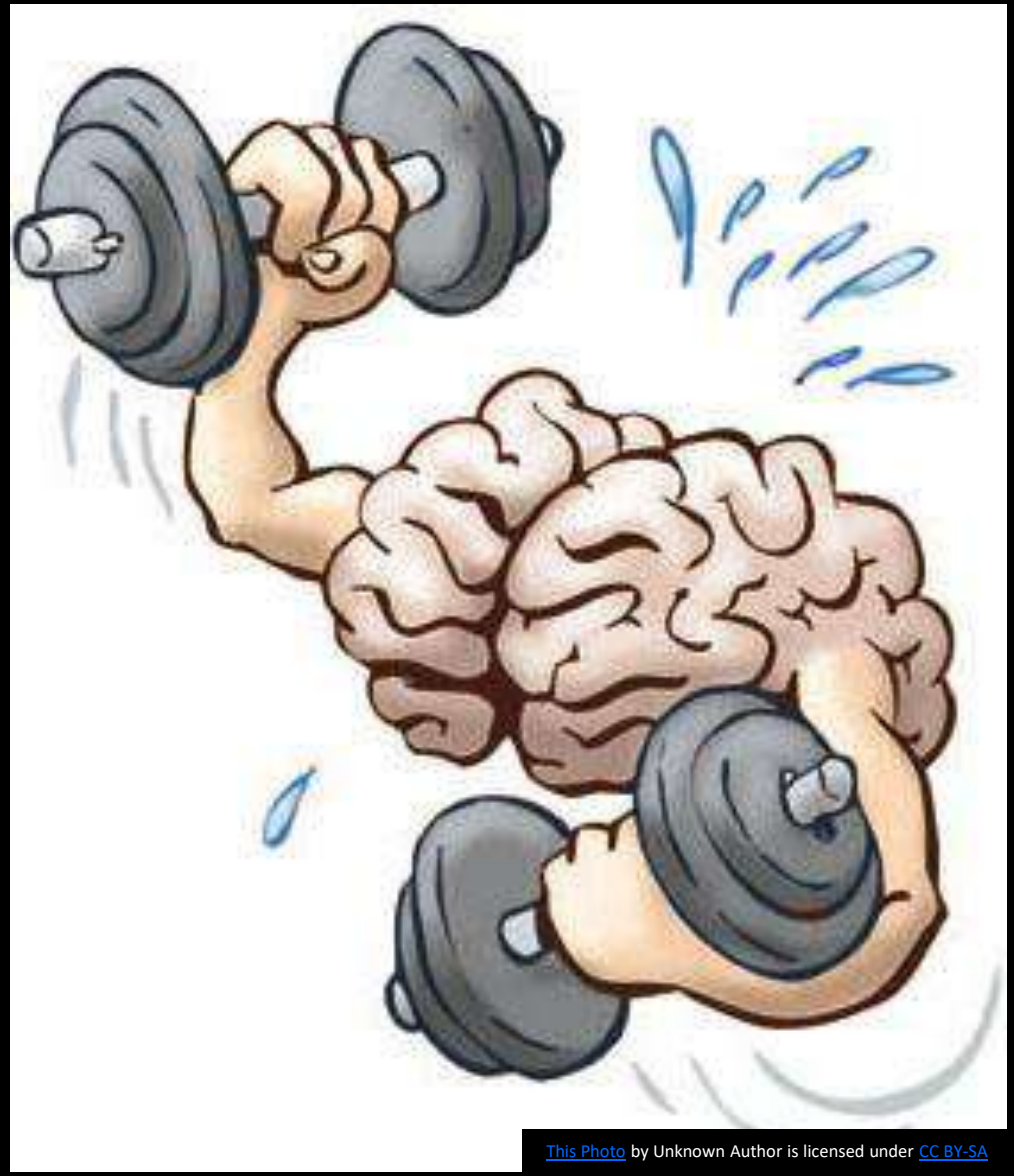
Why?

1. Children learn better with a partner
2. Slow is harder – it needs more memory
3. Becoming accurate makes the brain/body work harder
4. Feedback helps us all improve
5. Multisensory aids can make it easier for them to see/hear/feel the beat especially for those with hearing/sensory differences
6. Moving and passing objects help develop a tactile and visual sense of the beat

Practicing beat timing: The benefits?

The brain can become faster and more efficient at ‘hearing’ changes in sound

- This can make it easier to hear sounds and patterns in speech
- This can make it easier to link sounds to letters for reading



Using rhythm

Rhythm = Beat + Pattern

Benefits

- Motor coordination
- Motor timing
- Sensory integration
- Auditory-verbal memory

Using rhythm

What you can do

1. Sing songs together/in turn and clap repeating words/phrases
2. Clap patterns of words/phrases before saying/teaching the words
3. Create music percussion games based on words: call and response phrases; layers of words; names

Why?

1. Singing helps perception of sounds; clapping word rhythms helps perception of rhythm
2. This ‘primes’ the brain
3. Teach the rhythm of target words and phrases; practice turn-taking; practice attention

You've got rhythm!

Adaptations

1. Use images to represent rhythms e.g. dots
2. Support posture/movement
3. Experiment with movements/physical adaptations
4. Experiment with different instruments/objects and ways of hitting them (and holding them)

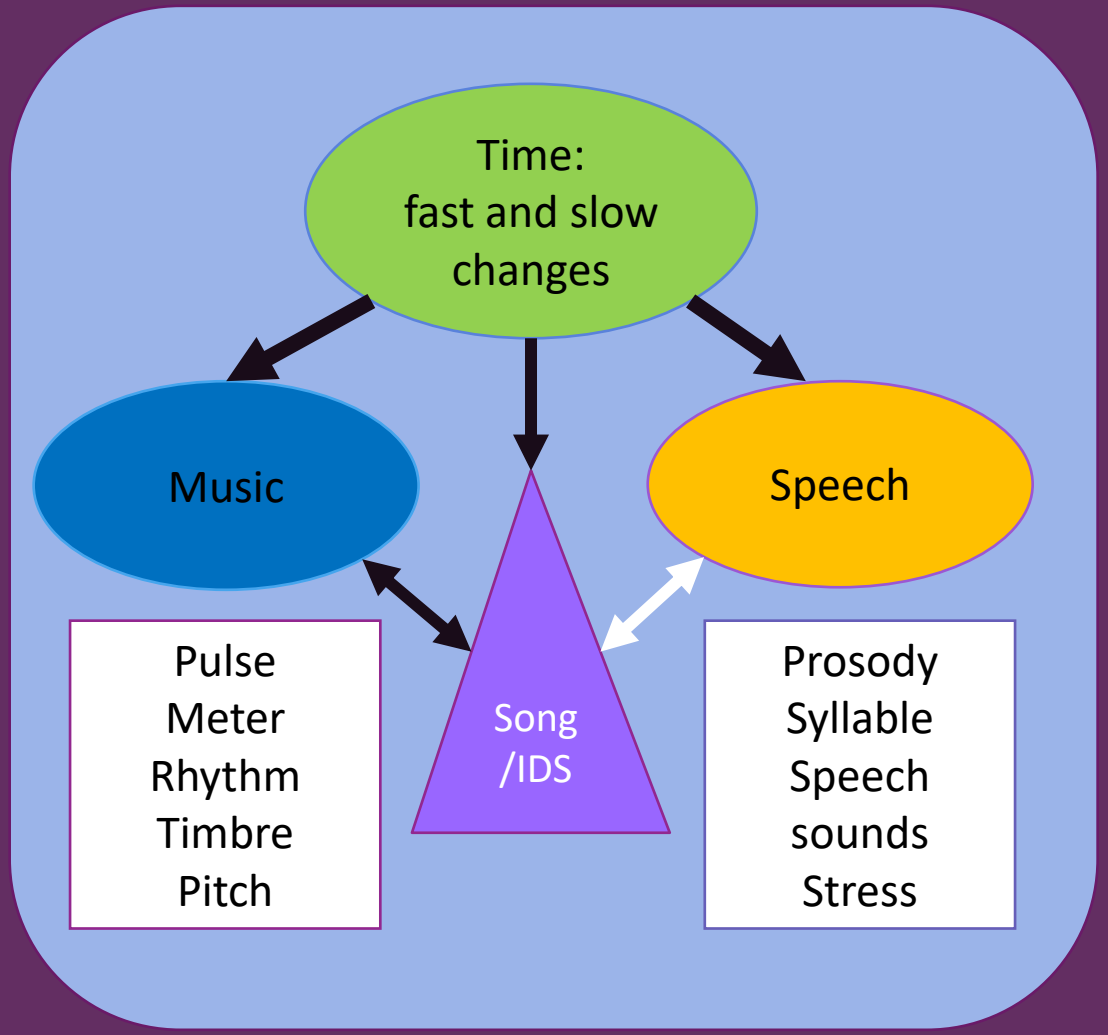
Why?

1. Supports auditory processing and memory
2. Enables concentration on rhythm timing
3. Some movements may be easier or more appealing – eg 'butterfly' movements
4. Some objects will have sounds that are better to perceive; modify hand grip/placement of objects to suit

Singing for Speech

Singing

- Overlap – physical and neurological
- Songs are slower than speech
- Songs/rhymes emphasise sounds
- The beat in songs/rhymes holds attention



Singing for speech - perception

Adaptations

- Use vowel sounds to teach ‘outline’ melody
- Clap the pattern then teach words
- Use actions/Makaton to support word learning and melody shape

Why?

- Easier to process
- Primes the brain for the speech rhythm; helps processing
- Helps memory and meaning

Singing for Speech 2 - voice

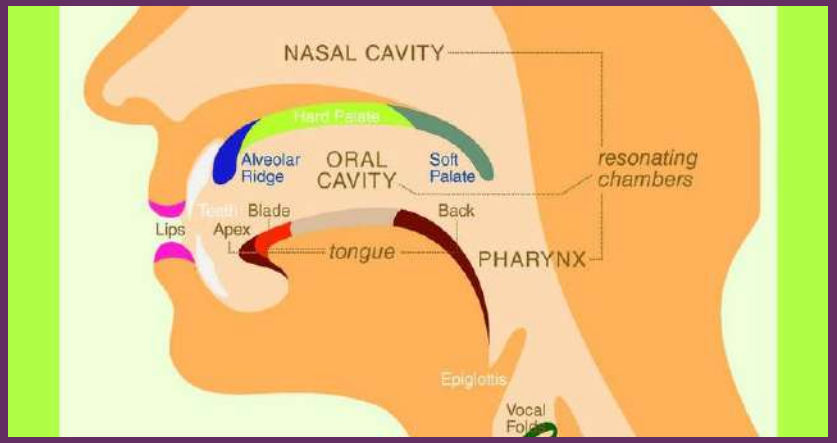
Guidelines

- Use gentle humming first
- Try kazoos!
- ‘easy’ speech sounds – emphasise them
- Use simple singing games/exercises (e.g. vocal play; commercial CDs)

Why?

- Support ‘easy’ phonation
- Engages the voice and stops ‘forceful’ singing
- Simple, repetitive

Singing for speech- production



- Use ‘easy’ speech sounds
- Target harder sounds in drills (e.g. chicken tikka)
- Whisper/mime words
- Vary pace

- Allows for success
- Practice
- Exaggerates movements for speech sounds
- Slower practice allows more time to build skills

Putting it all together: example

Warmups

- Dance/move to the beat of a favourite song: practice stamping, tapping, or clapping the ‘strong’ beat
- Sing/vocalise the chorus with kazoos or on a vowel – use arms to conduct the melody/show high/low
- Practice clapping words in chorus using image/picture/Makaton or gesture as a prompt; then say the words
- Play air-instruments/mime to favourite song

Work

- Simple drumming: hello how are you? Turntaking/playing together – loud/quiet/slow/fast/steady beat
- Rhythm poem: Play the beat to a poem/rhyme; play the word rhythms; play the rhythms to a beat; say the words whilst clapping/playing beat or rhythm
- Action Songs: e.g. Hi Lo Chickalow/Hey Mr Miller
- Songs: fill in words/phrases in songs/actions/picture when prompted
- Create: write songs about the child/learner
- Cool down: slow movements to music; lie/sit and relax/breathe to music

Suggested resources

HOME ▸ WHAT'S ON

UpRising Inclusive Choir

The UpRising Inclusive Choir is a musical community without barriers for people all ages and all abilities, with a focus on giving a voice to people with severe and profound learning disabilities.

Books

- Bean, J and O
  Activities to d
- Ramey, M. Gr
  intellectual an
- Dworsky, A. 2
  Rhythms with
- Masala, K.S. and Presence, C (2004). *Rhythm Play!: Rhythm Activities and Initiatives for Adults, Facilitators, Teachers, & Kids!:* FUNdoing Publications
- Stourmont, B and Shephard,C and Shephard, K. (2004). Jabulani! Ideas for making music

s/app-share/

ng and more!

activities for people with complex needs

https://www.soundsofintent.org/index.php?option=com_content&view=article&id=10

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soundLINCS
Unleashing potential through music

Coming soon – Jessica Kingsley Publishers