

Going into the Unknown, Together: Improvisation Theatre and Science

Uri Alon

kartoshkes@gmail.com



Going into the unknown together

- Demonstration of improvisation theatre
- Principles from improvisation theatre and their relevance to science
- Scientific study of human behavior using theatre - the mirror game

Saying

YES AND

is a basic
principle of improvisation

The Inner Critic censors our actions so
we don't appear crazy, obscene or
unoriginal

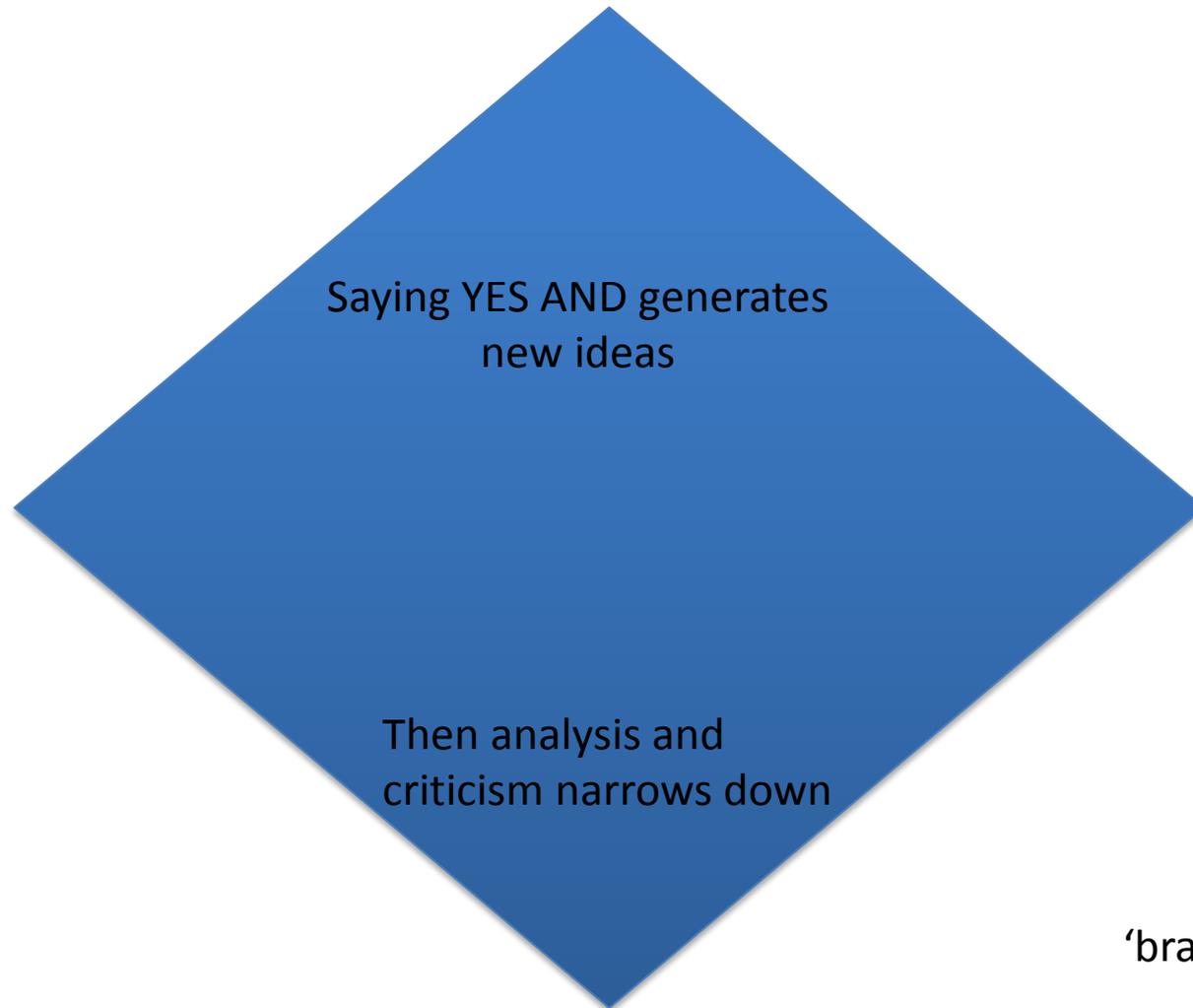


Saying

YES AND

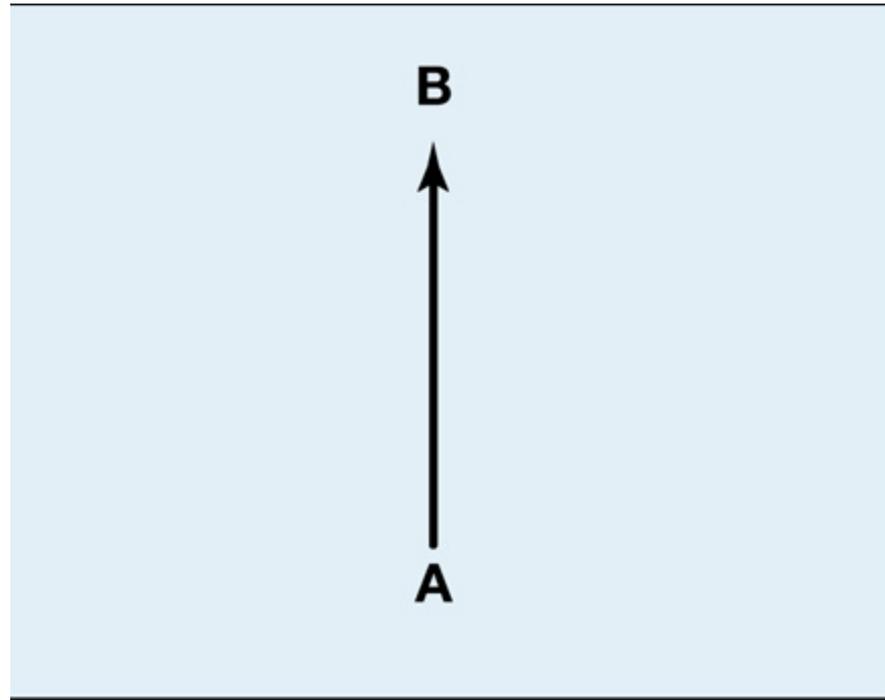
bypasses the inner critic
opening the way to original
joint creation

A good scientific conversation has a playful stage of opening and a critical stage of closing

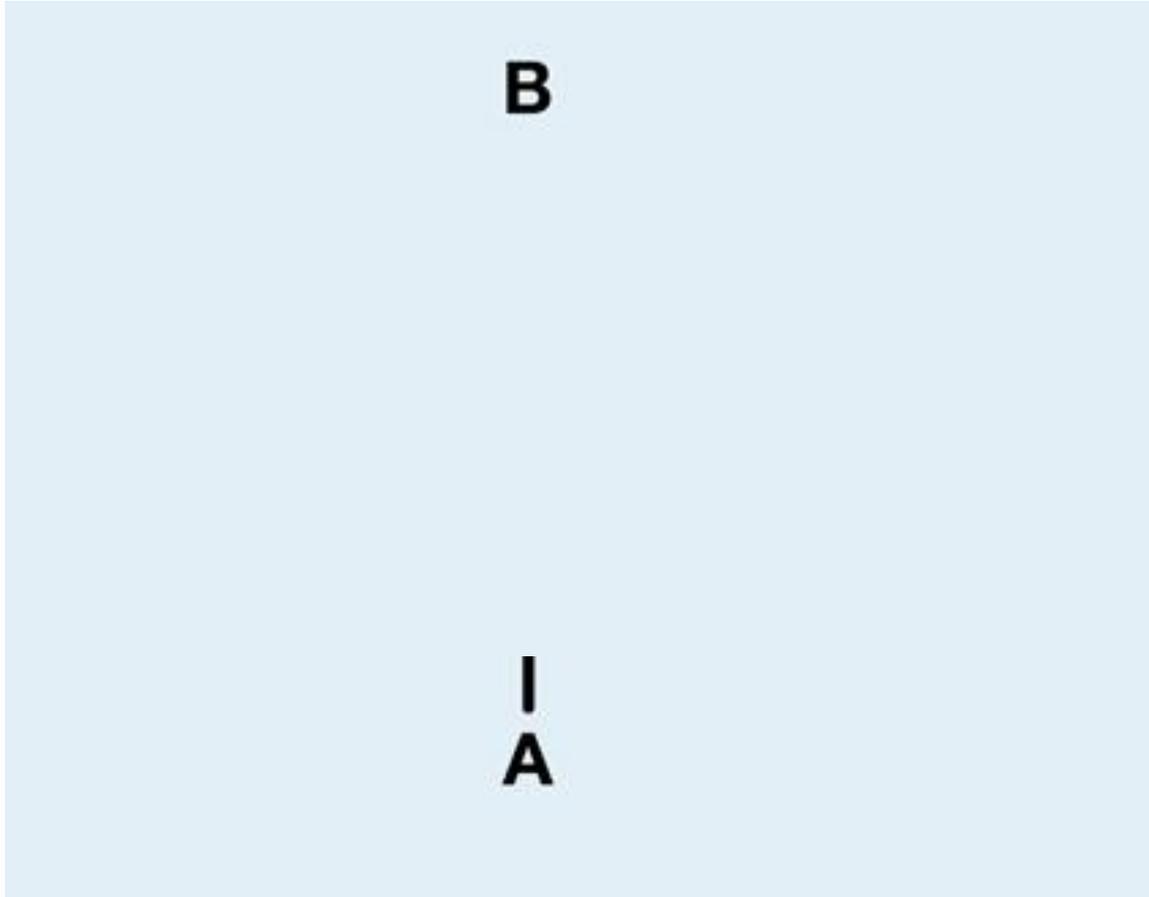


'brainstorming'

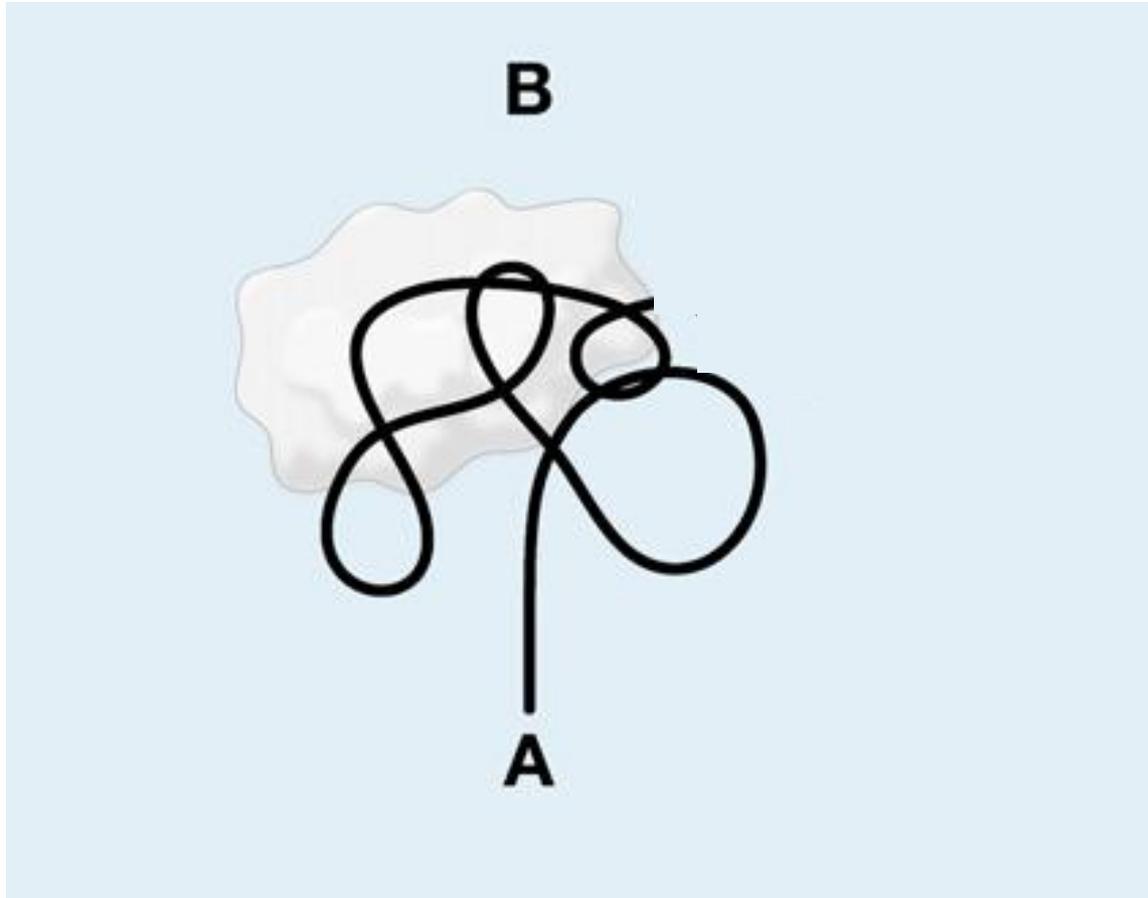
Textbook schema of doing research is
a straight path



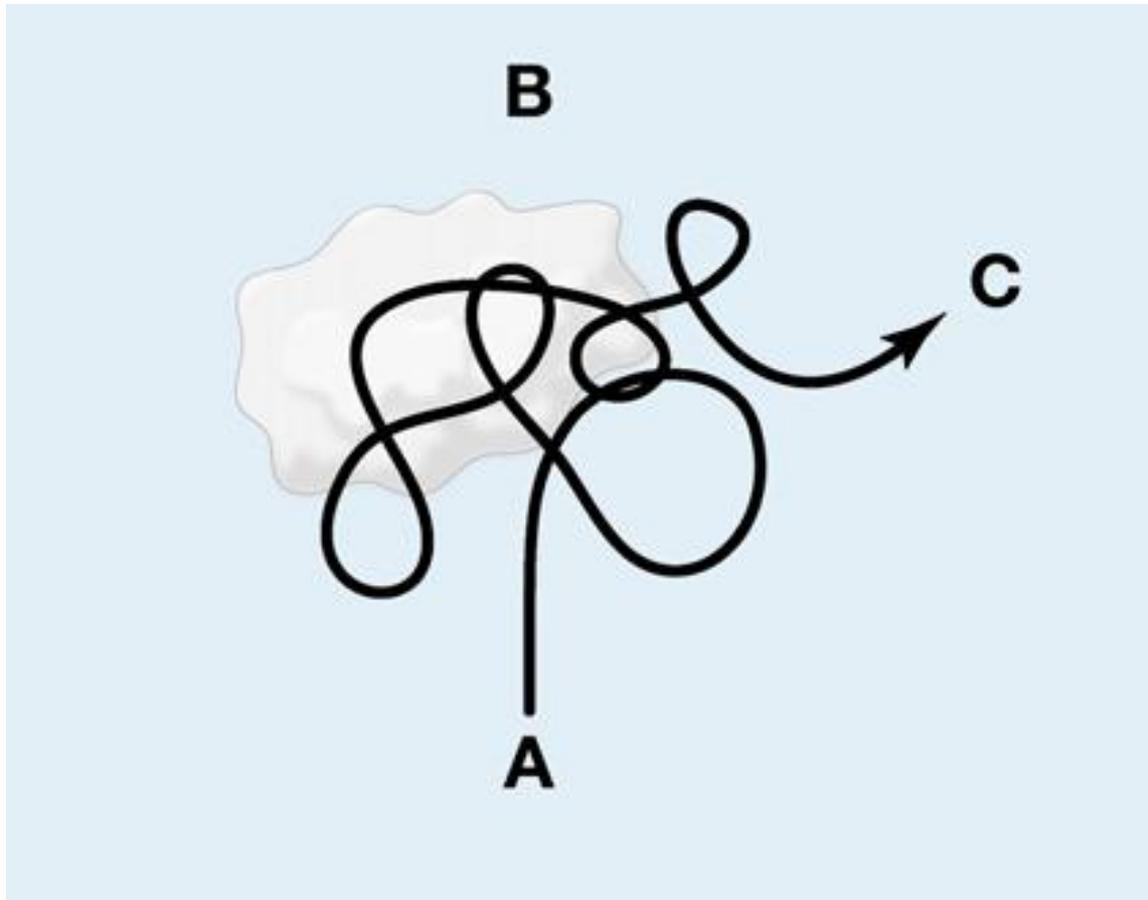
A more realistic schema starts
from A towards B



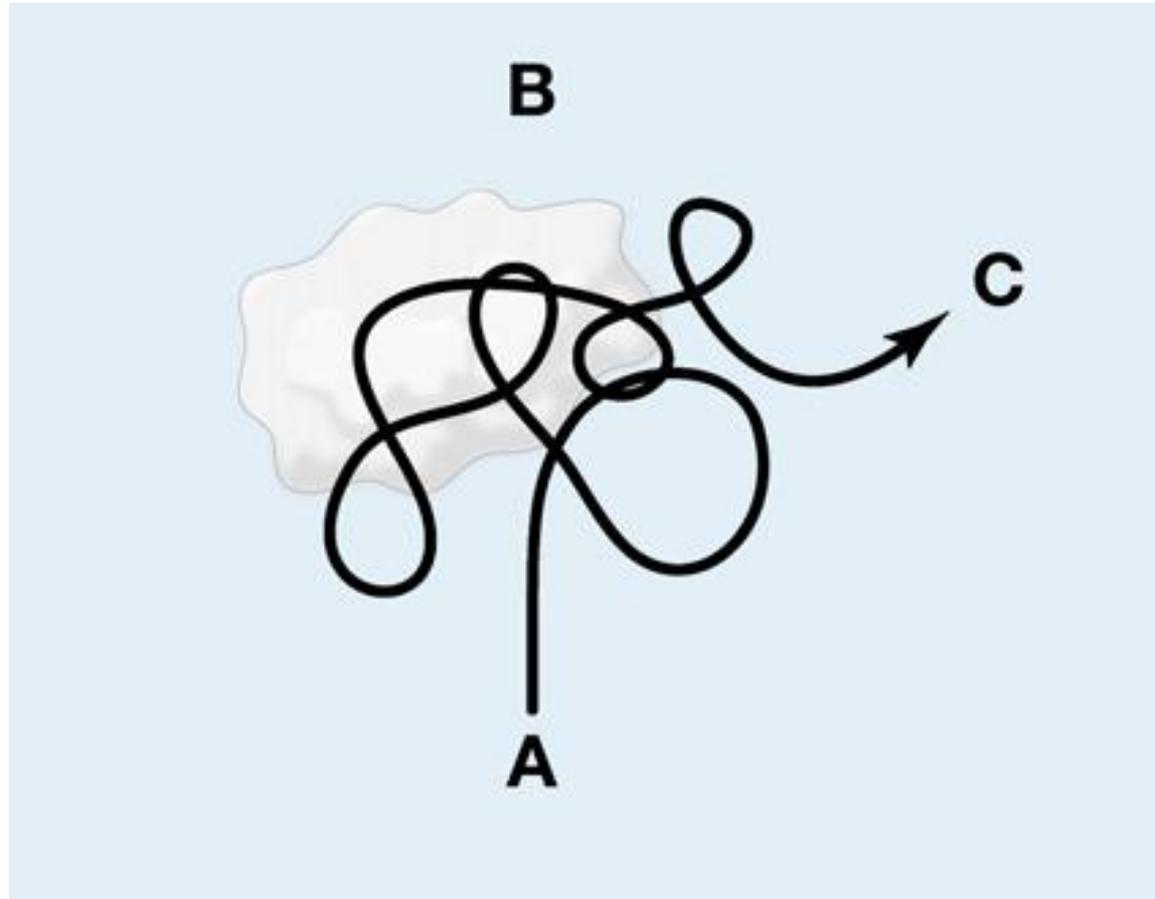
Experiments don't work, until you are
stuck in the cloud



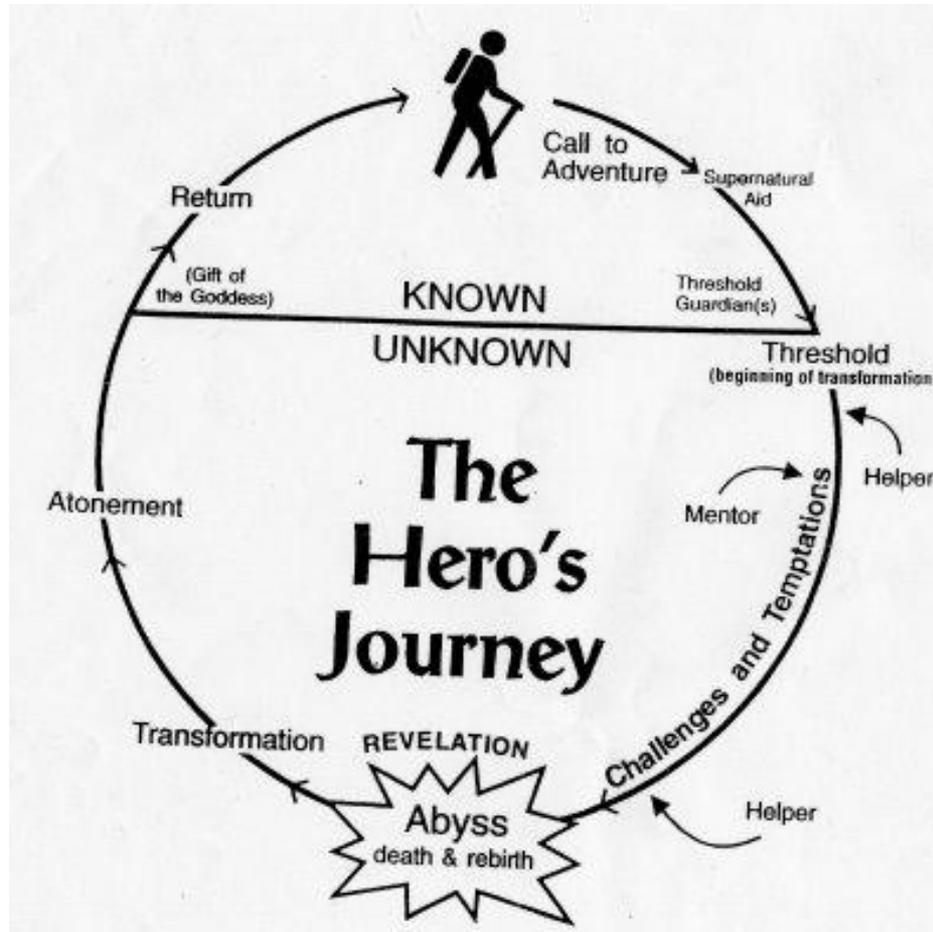
You see something new in the materials and find answer C



The cloud stands at the boundary
between the known and the unknown



Going into the unknown – an element of a classic narrative form called the Hero's Journey



Togetherness is a state of high performance, flow and a sense of joint creativity with no leader



Relevant concepts:
group creativity, group flow,
communitas (Victor Turner), being in
the 'zone'

“an opening to which all present contribute”
(Peter Brook)

The mirror game is a theatre exercise aimed at getting actors into togetherness

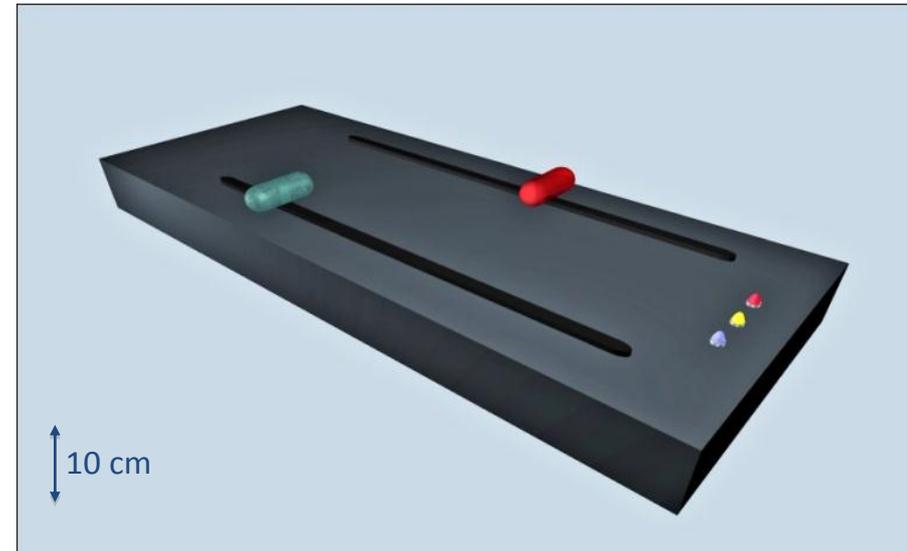


“The theatrical event is fundamentally a mirroring” (Richard Schechner, *Environmental Theater*)

We simplified the mirror game to one dimension



Instruction: “imitate each other, create synchronized and interesting motions, and enjoy playing together”



Device: sliders are 55 cm long, sampling at 50Hz, spatial accuracy ~1mm

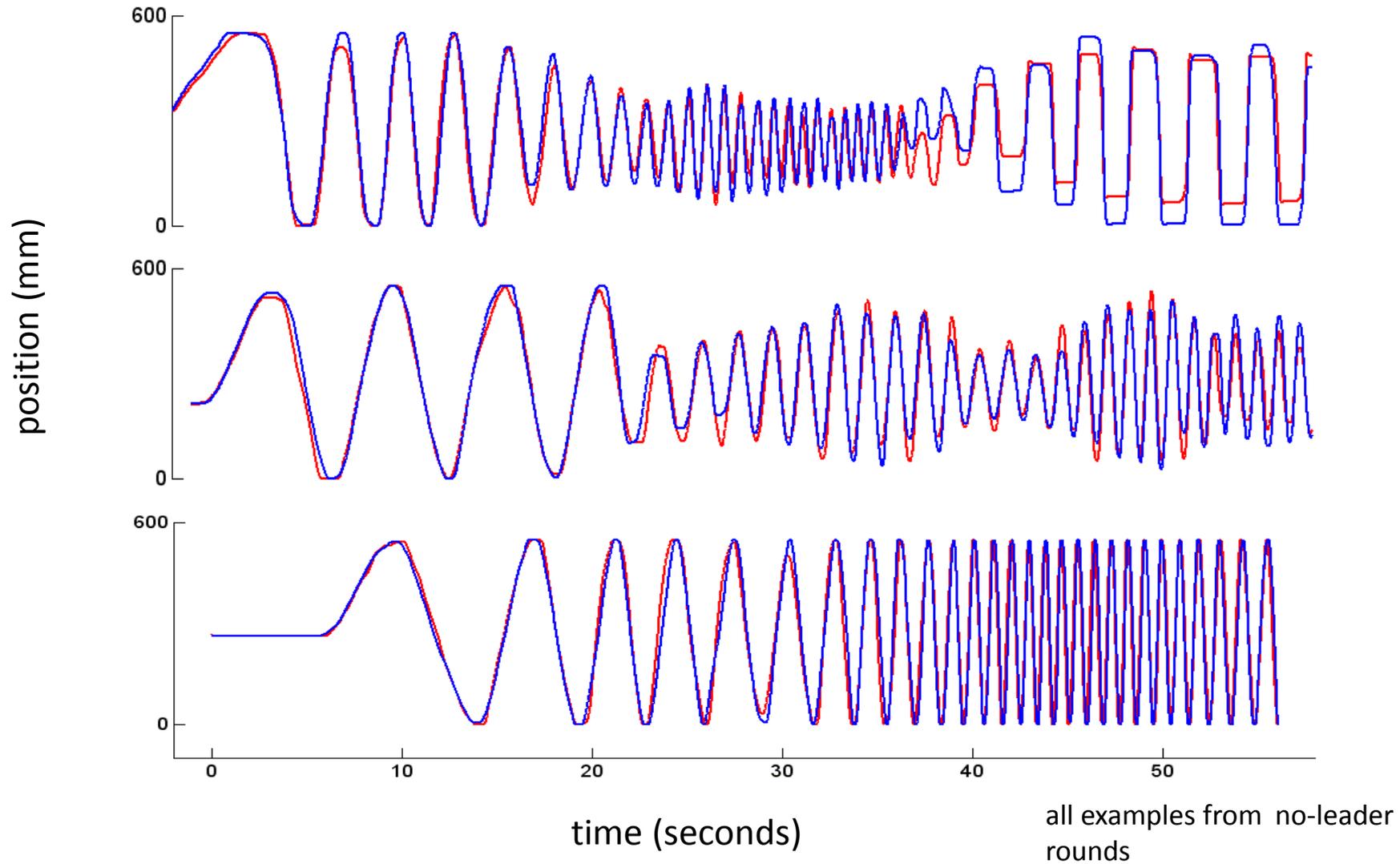
We compared turns with a leader to turns with no designated leader



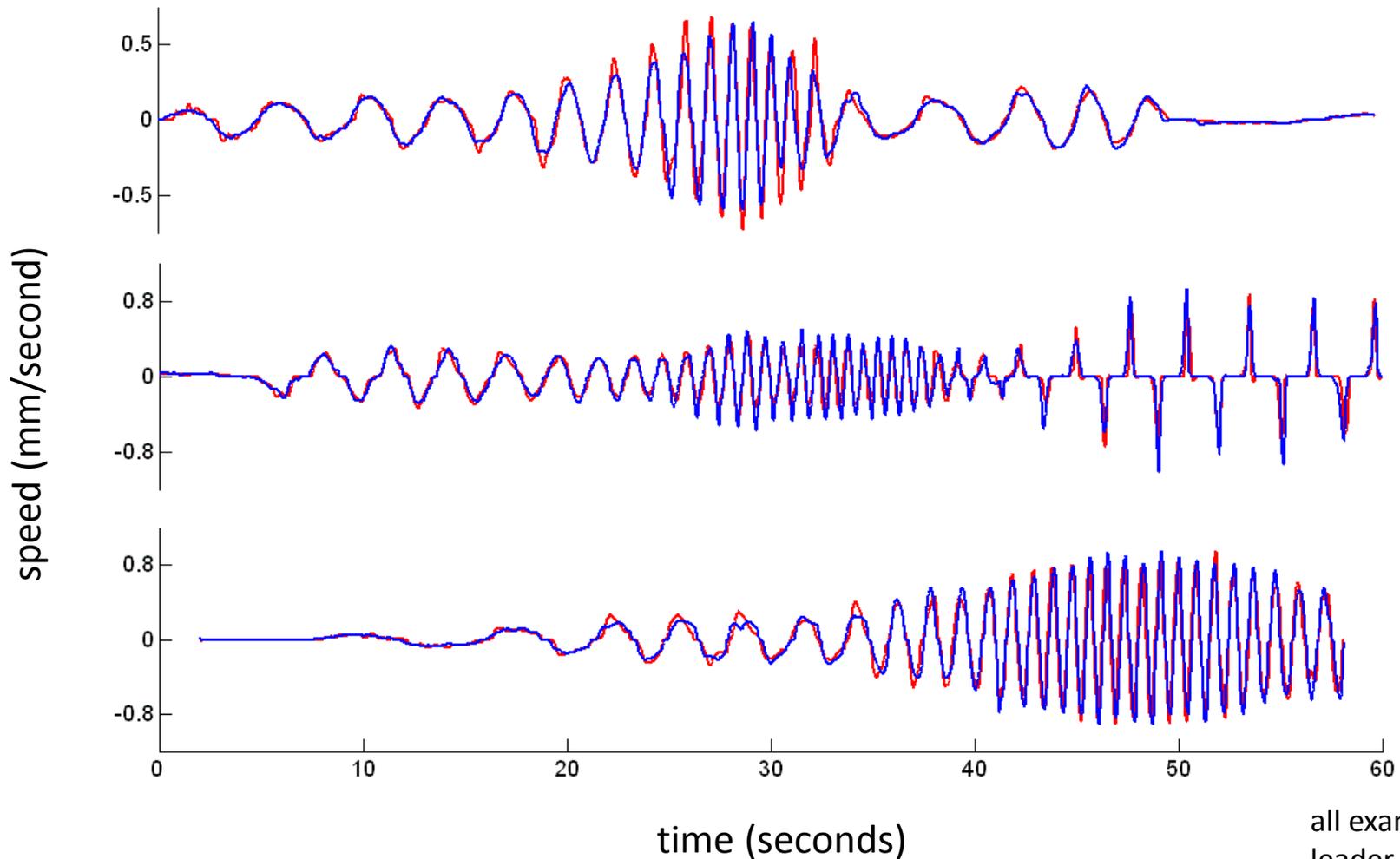
Red or Blue Light
indicates who leads

Both lights indicate no
designated leader or follower

Players create complex motion together



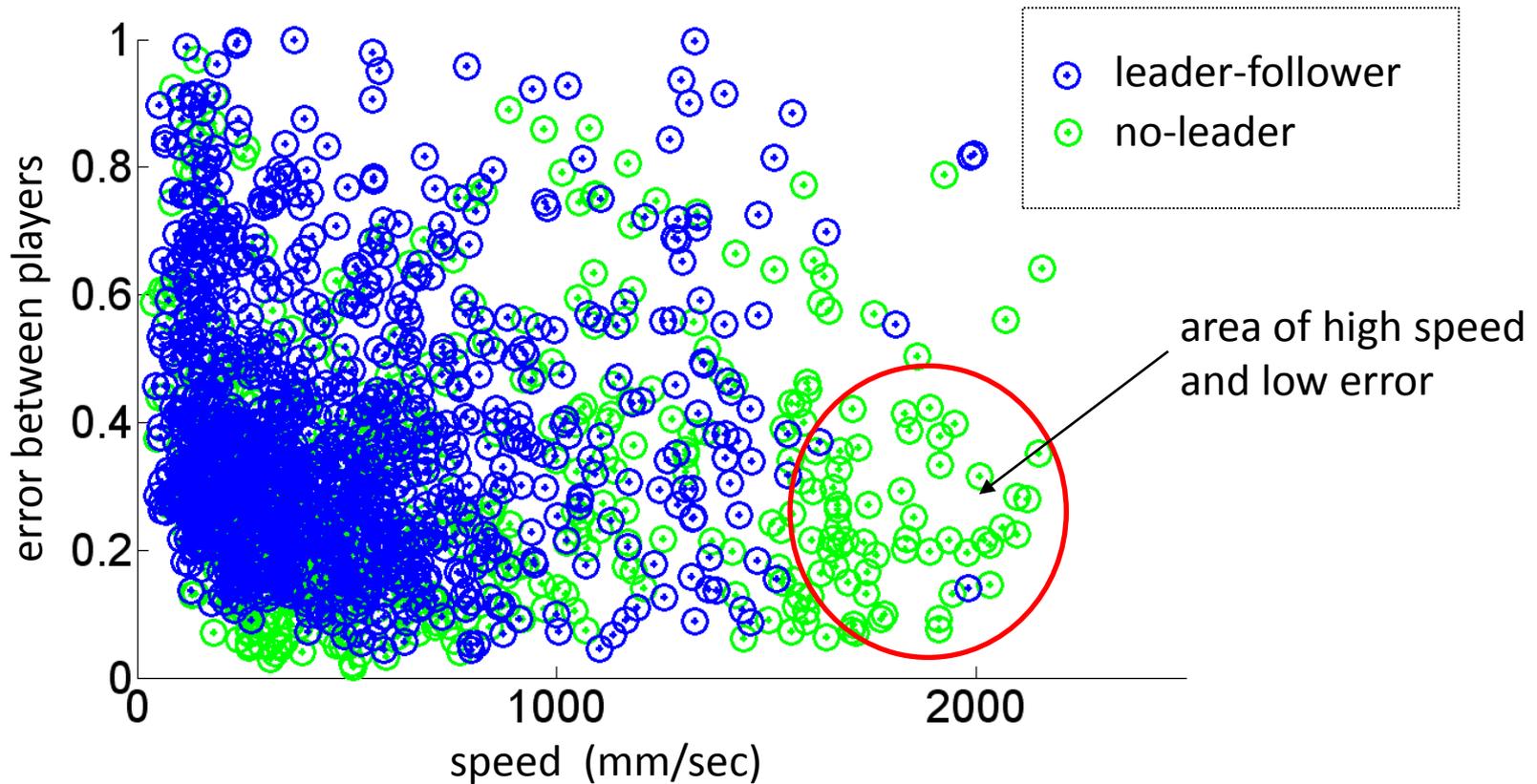
They show changes in frequency and amplitude, as well as abrupt stops



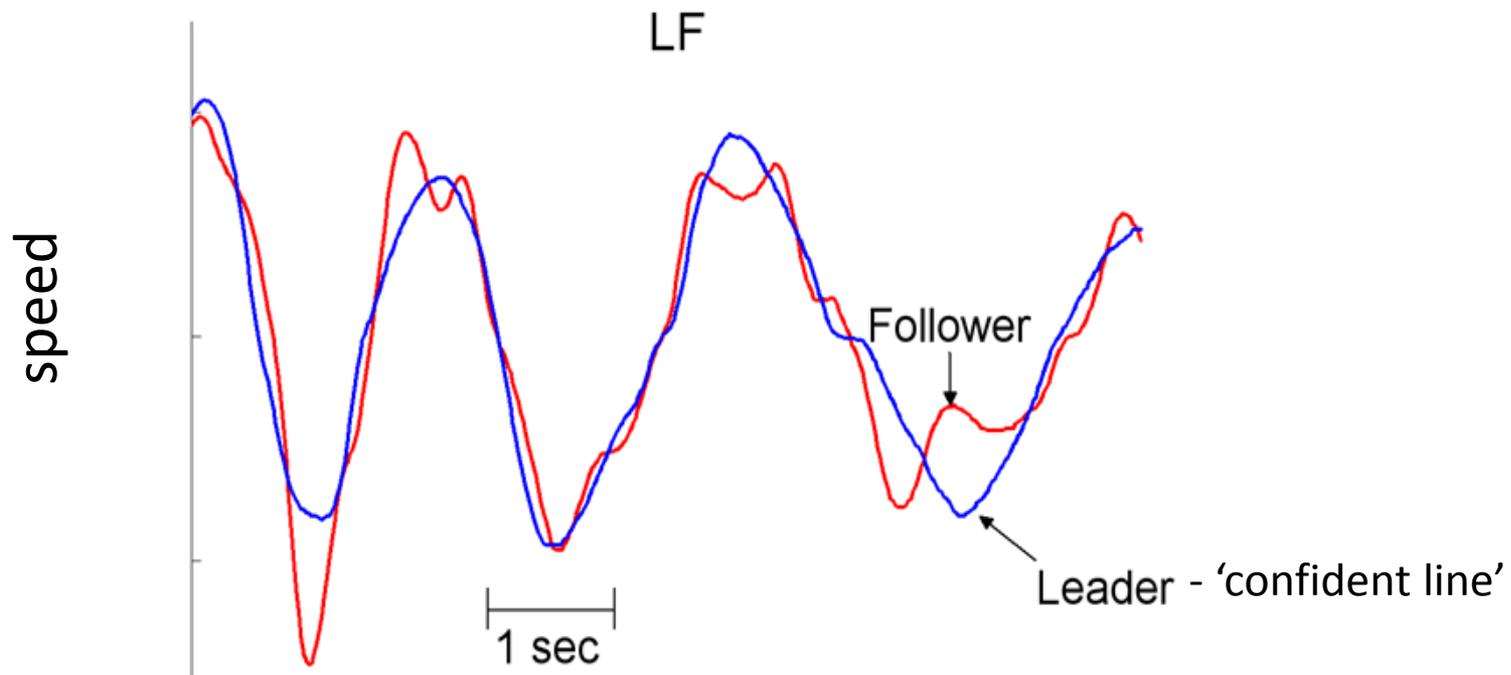
all examples from no-leader rounds

Together is Better

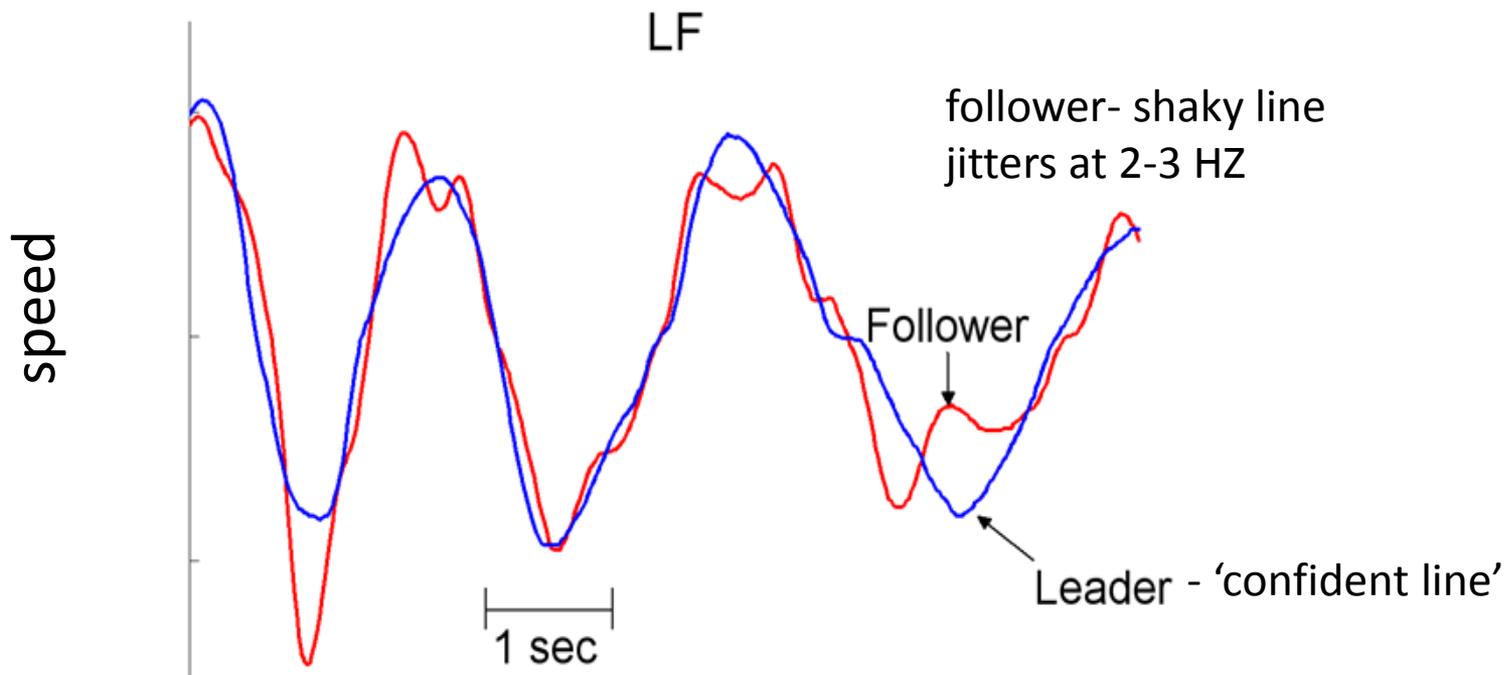
With no designated leader experts reach higher velocities and better accuracy



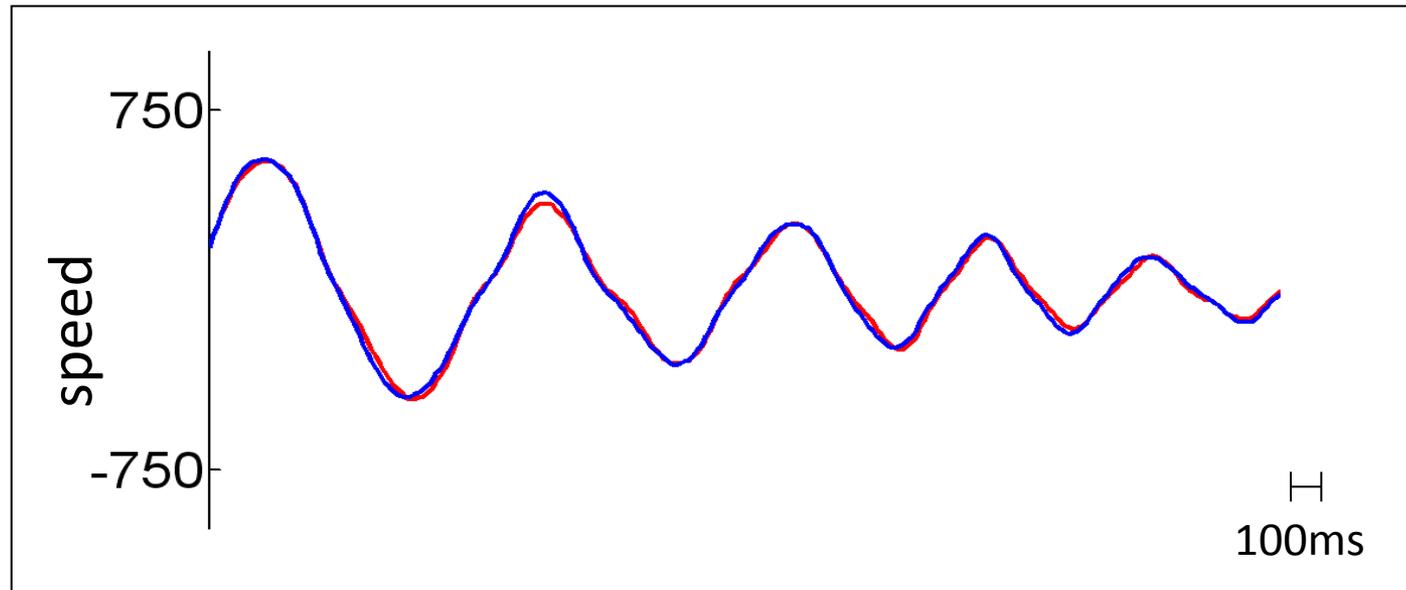
Leader makes smooth motions – a confident line



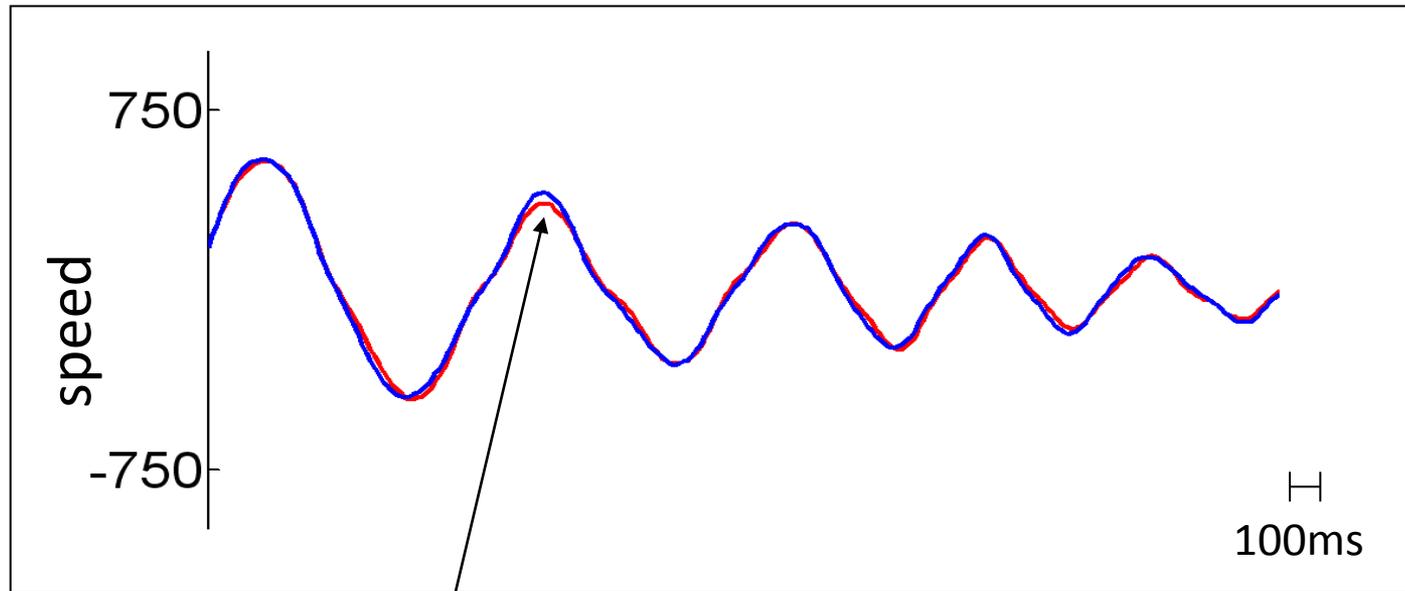
Follower oscillates around leader with 2-3Hz frequency



without a designated leader,
players enter a state where both
move as leaders,
without the 2-3Hz oscillation of a

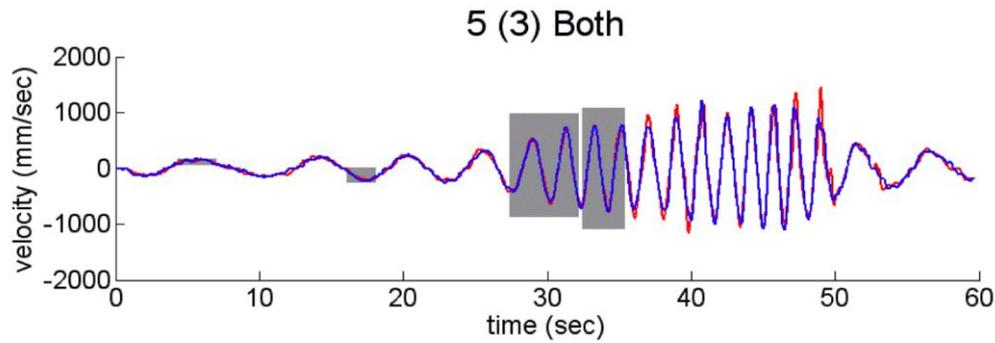
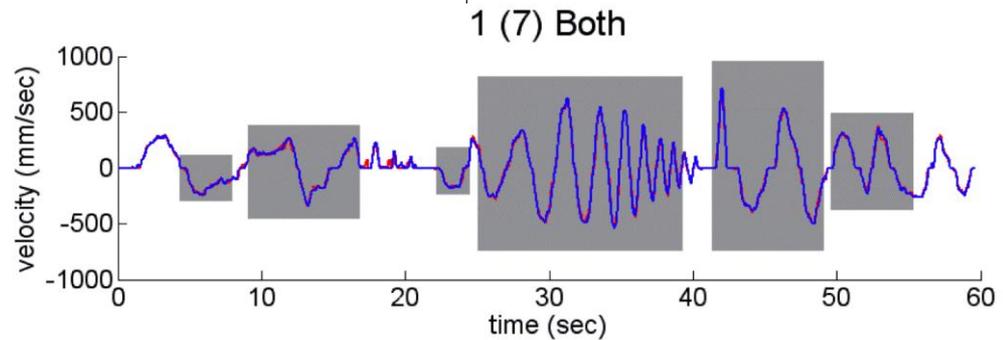
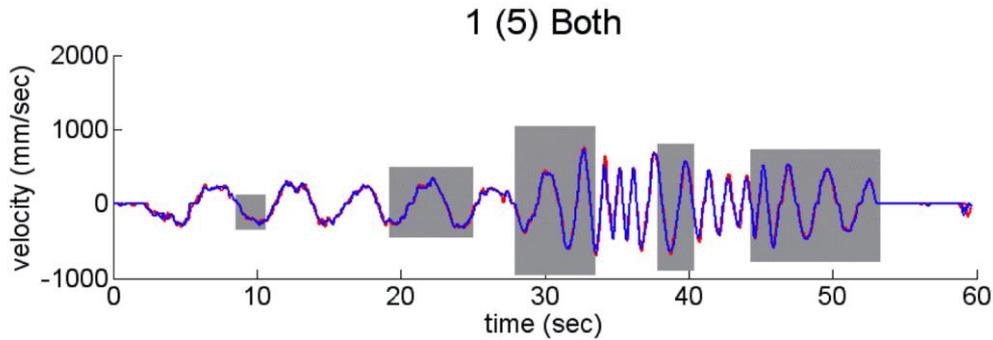


Players seem to agree on future motion



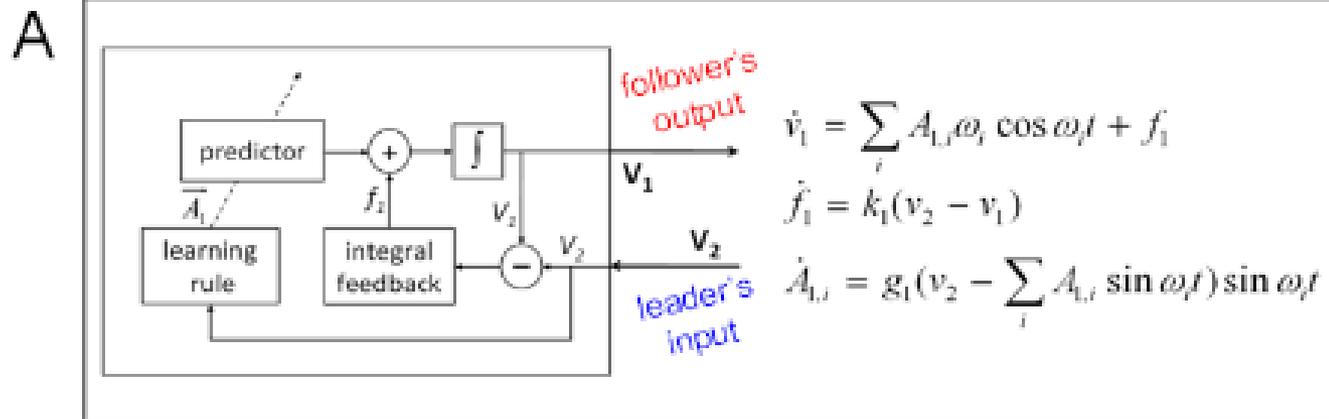
Players synchronized better
than human reaction time
(100 ms)

Expert improvisers can create complex motion together

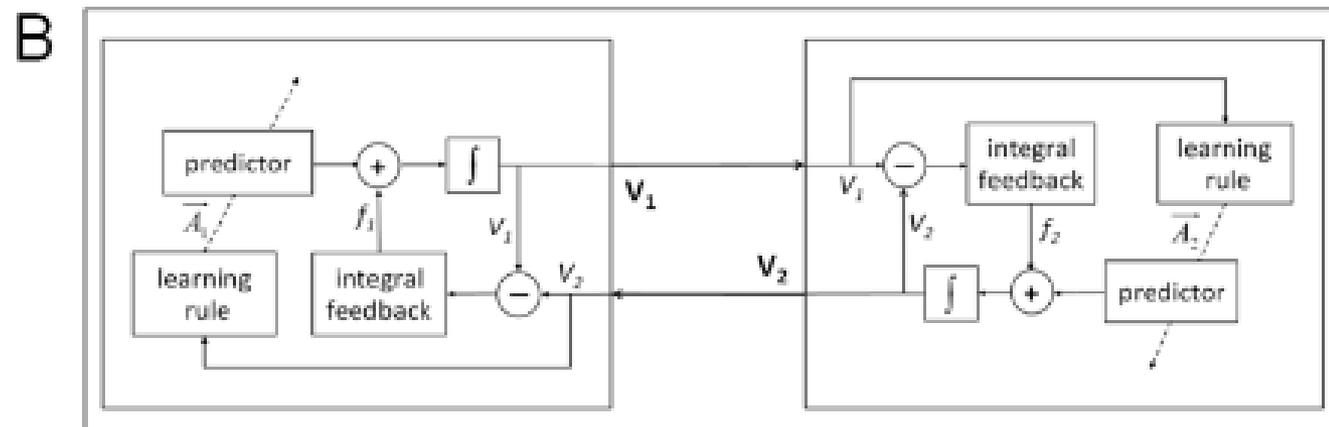


A model of mirrored controllers suggests players inner predictors agree, whereas their inner critics cancel out

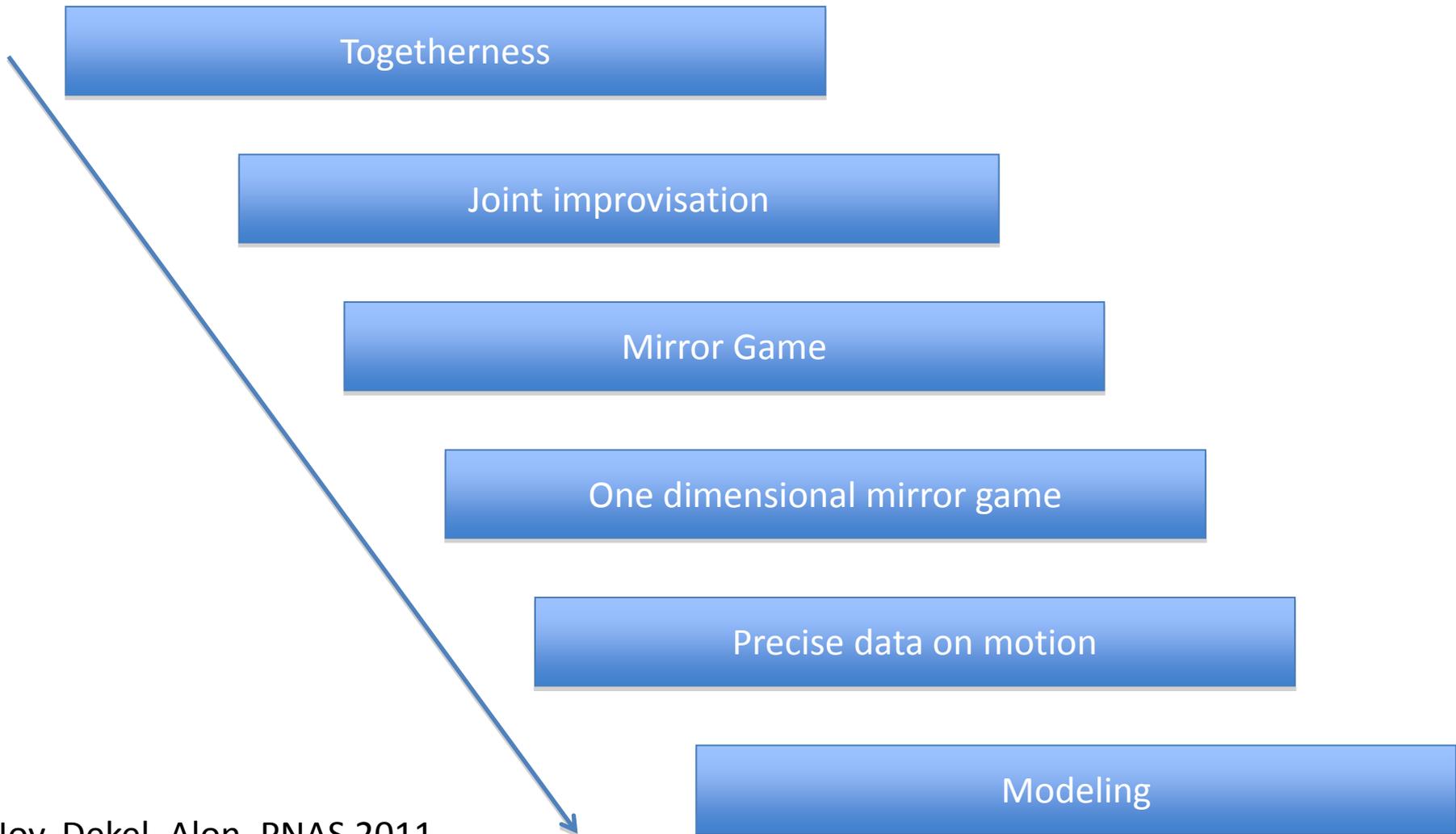
LF model



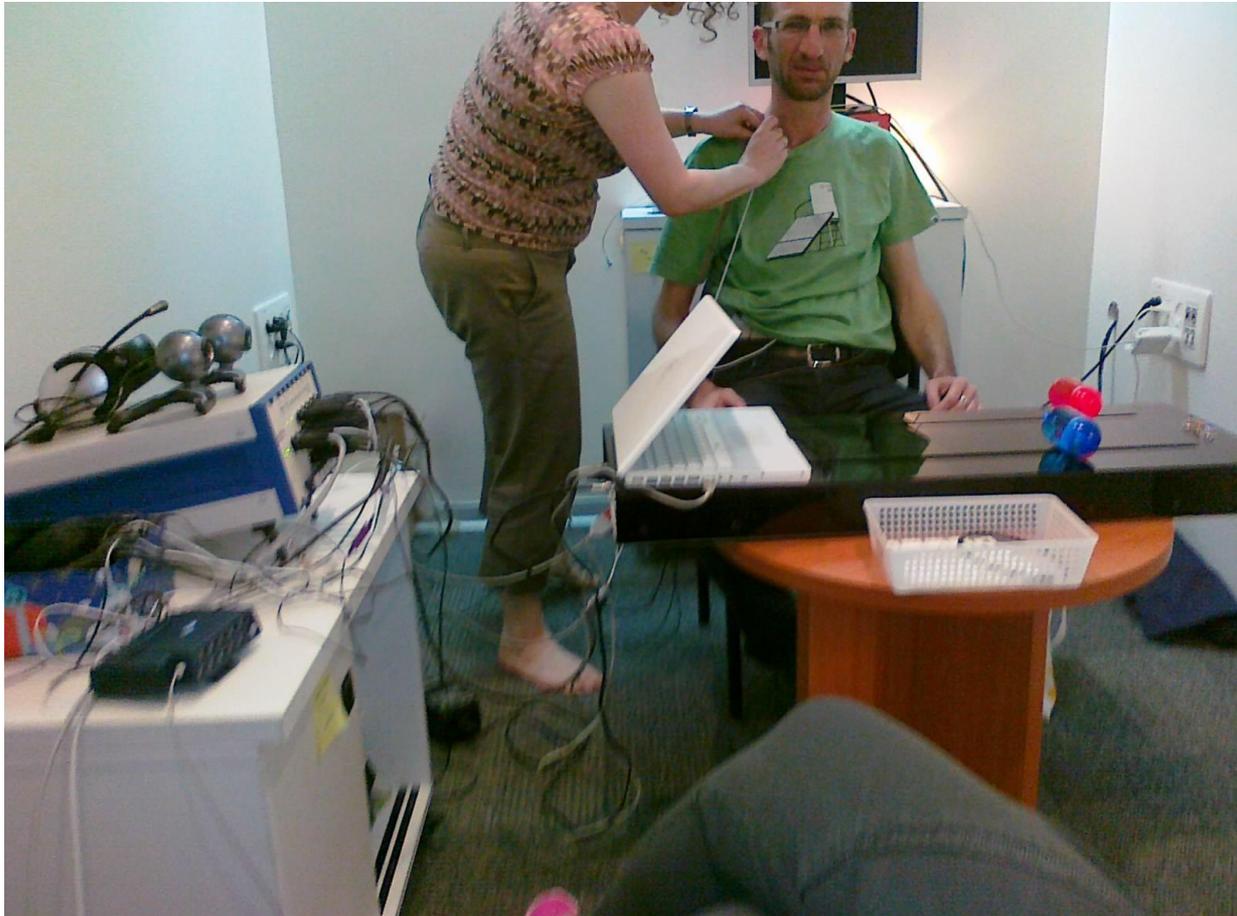
JIM model (mirror configuration)



Use of a theater exercise to form an experimental paradigm for Togetherness



Next step: heart rate and breathing during mirror game



The theatre lab at Weizmann aims to use
theatre concepts and exercises

to form experimental paradigms

to study basic principles of human
behavior and interactions

Support: the Braginsky center for science and humanities

Summary – How to go into the unknown together

Say YES AND!

Joy, spontaneity and play are good for science

Play the mirror game with your loved ones

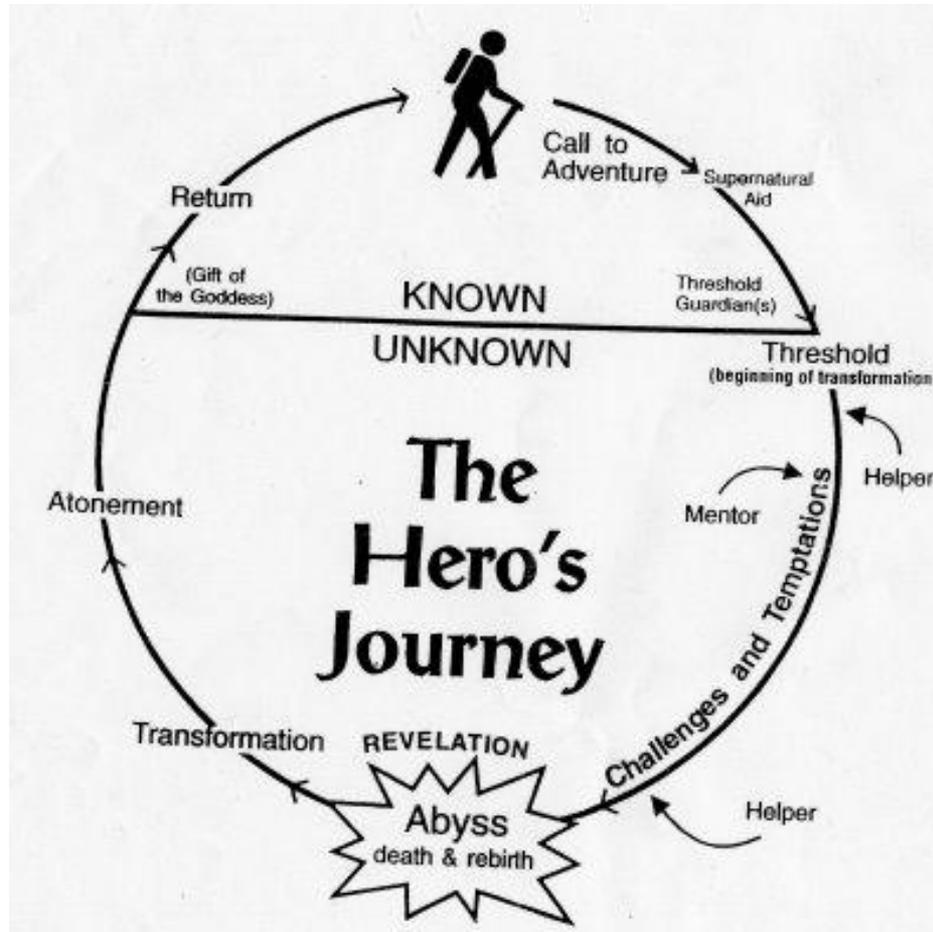
Fellow Travelers into the Unknown

- Lior Noy
- Yulia Golland
- Rinat Feniger-Shaal
- Yuvalal Liron
- Galia Moran

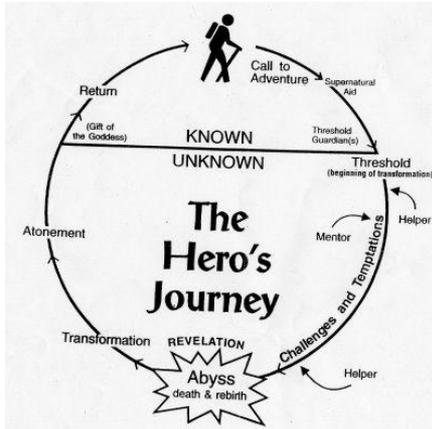
- Kartoshkes Playback Theatre ensemble

- The Braginsky center for the interface between science and humanities,
- Headed by Itamar Procaccia

Going into the unknown – an element of a classic narrative form called the Hero's Journey



ללכת אל הלא ידוע



"הענן"



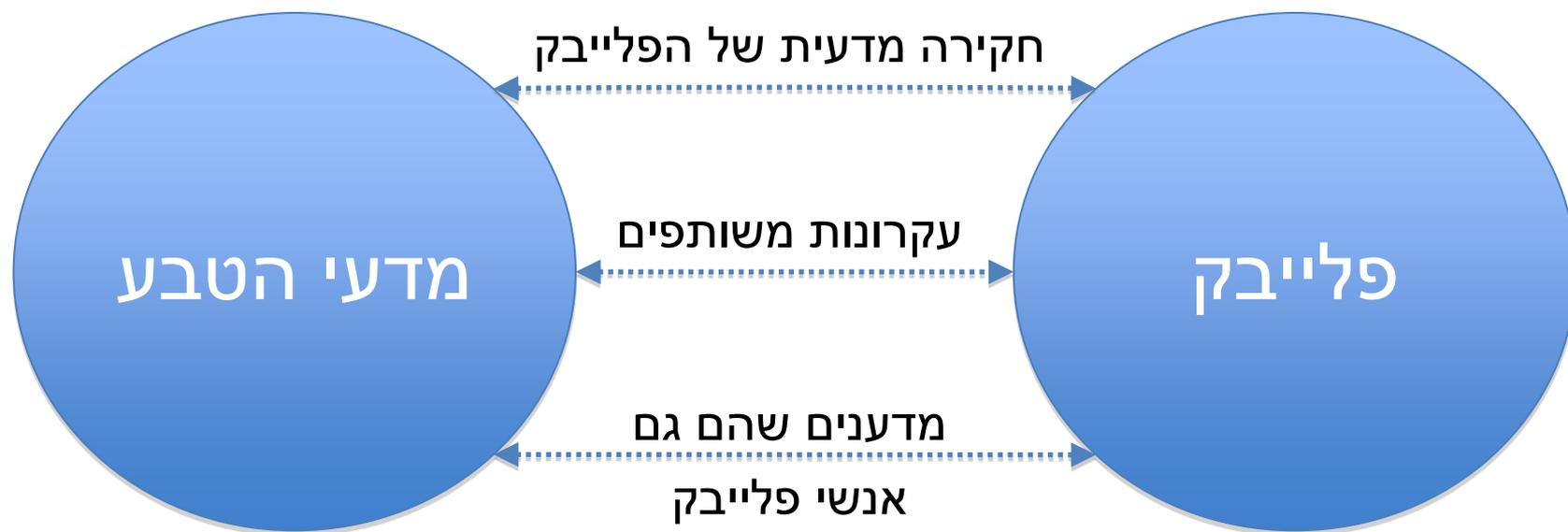
ללכת ביחד אל הלא ידוע

'כן! לרעיון

("לתפוס לוויתן בזנב" / אורי אלון, "הארץ")



קשרים בין פלייבק ומדעי הטבע



Fellow Travelers into the Unknown

- Lior Noy
- Yulia Golland
- Rinat Feniger-Shaal
- Yuvalal Liron
- Galia Moran

- Kartoshkes Playback Theatre ensemble

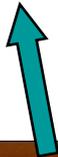
- Braginsky center for the interface between science and humanities at the Weizmann Institute

in play back theatre, actors and musicians listen to a story told on stage and improvise a scene on the spot

an audience member tells a real story



actors listen deeply



actors play-back: improvise a reflection of the story using text, movement and sound, trying to bring about the 'heart of the story'.