

# **Supplementary Material 2: Interacting Learning Processes during Skill Acquisition: Learning to control with gradually changing system dynamics**

**Nicolas Ludolph<sup>1, 2\*</sup>, Martin A. Giese<sup>1</sup>, Winfried Ilg<sup>1</sup>**

<sup>1</sup>Section Computational Sensomotrics, Department of Cognitive Neurology,  
Hertie Institute for Clinical Brain Research, and Centre for Integrative Neuroscience, University of Tübingen,  
Germany

<sup>2</sup>International Max-Planck Research School for Cognitive and Systems Neuroscience, University of Tübingen,  
Germany

Corresponding author: Nicolas Ludolph  
Department of Cognitive Neurology,  
Hertie Institute for Clinical Brain Research,  
Centre for Integrative Neuroscience  
Otfried-Müller-Straße 25, 72076 Tübingen, Germany  
Phone: +49 7071 29 89131  
Email: nicolas.ludolph@uni-tuebingen.de

## Dataset Description

In all \*.csv files:

Subject	Subject ID
Group	Group of Subject

Dataset1.csv:

Age	Age of Subject
Gender	Gender of Subject
Tinit	Initial avg. trial length (average over the first 5 minutes)
Tend	Final avg. trial length (average over the last 5 minutes)
TT0init	Initial avg. normalized trial length (average over the first 5 minutes)
TT0end	Final avg. normalized trial length (average over the last 5 minutes)
IRinit	Initial avg. reward per second (average over the first 5 minutes)
IRend	Final avg. reward per second (average over the last 5 minutes)
SUCCfirst	Time till the first successful trial (minutes)
ISIm10	Avg. inter-success-interval over the first 10 successes

Dataset2.csv:

Pgw1	avg. (g: 1.0 - 3.5) trial length difference within gravity steps
Pga1	avg. (g: 1.0 - 3.5) trial length difference across gravity steps
ATgw1	avg. (g: 1.0 - 3.5) action timing difference within gravity steps
ATga1	avg. (g: 1.0 - 3.5) action timing difference across gravity steps
AVgw1	avg. (g: 1.0 - 3.5) action variability difference within gravity steps
AVga1	avg. (g: 1.0 - 3.5) action variability difference across gravity steps
Pgw2	avg. (g: 1.3 - 3.5) trial length difference within gravity steps
Pga2	avg. (g: 1.3 - 3.5) trial length difference across gravity steps
ATgw2	avg. (g: 1.3 - 3.5) action timing difference within gravity steps
ATga2	avg. (g: 1.3 - 3.5) action timing difference across gravity steps
AVgw2	avg. (g: 1.3 - 3.5) action variability difference within gravity steps
AVga2	avg. (g: 1.3 - 3.5) action variability difference across gravity steps

Dataset3.csv:

SuccessNr	Number of success
ISI	inter-success interval

Dataset4.csv:

Time	time passed since the beginning of the experiment
G	gravitational constant
T	trial length
TT0	normalized trial length
R	cumulated reward
IR	instantaneous reward

Dataset5.csv:

Time	time passed since the beginning of the experiment
AT	action timing
AV	action variability

Dataset6.csv:

Tbin	trial length bin
ATnl	normalized action timing
AVnl	normalized action variability