Music
Technology
Group

TapTamDrum:
A Dataset for Dualized Drum Patterns

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ISMIR 2023

| Introduction | TapTamDrum Dataset | Preliminary Insights |

Overview

Initial Objective

Is there a low dimensional pattern that can capture the essence of a given multi-voice drum pattern?

Literature Review

Refined Objective

Can a dual voice reduced pattern capture the rhythmic essence of a multi-voice drum pattern?
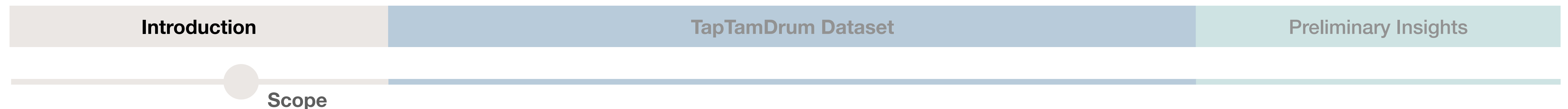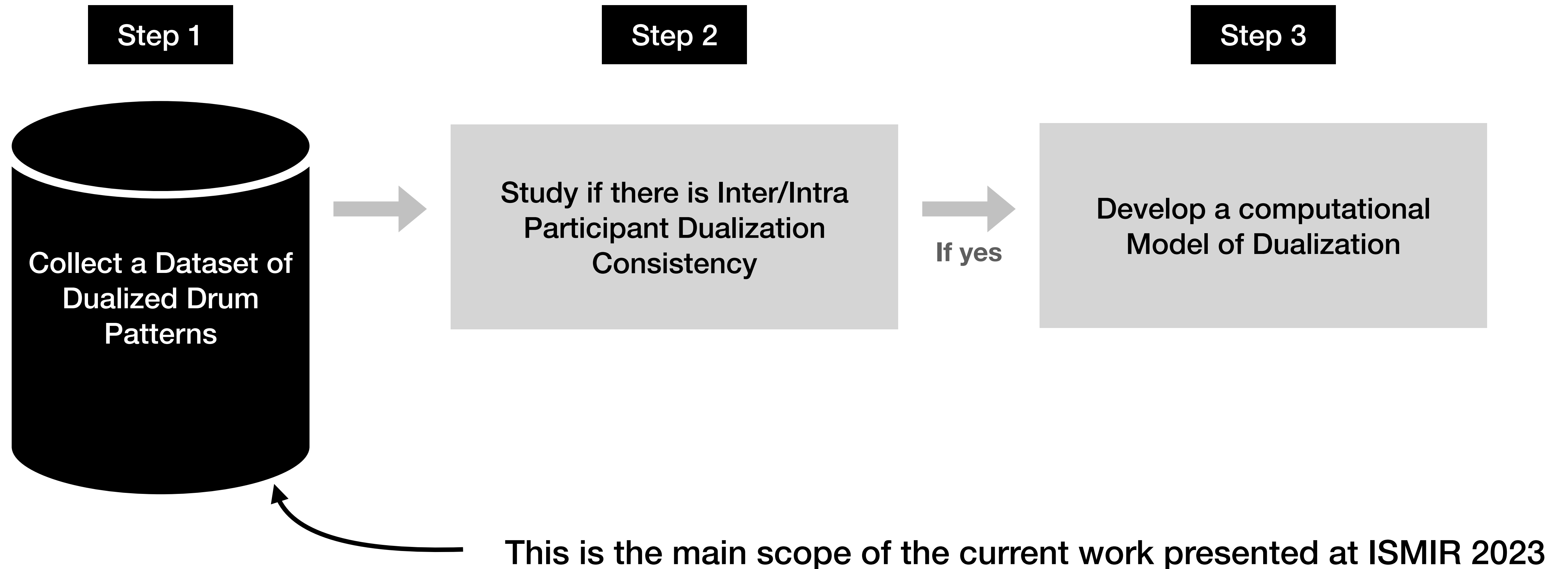
Scope of the Current Work

Step 1

Collect a Dataset of Dualized Drum Patterns

Step 2

Study if there is Inter/Intra Participant Dualization Consistency

If yes

Step 3

Develop a computational Model of Dualization

This is the main scope of the current work presented at ISMIR 2023

Introduction   TapTamDrum Dataset   Preliminary Insights

Scope

TapTamDrum Dataset

Data Collection Sessions

	Participant 1	Participant 2	Participant 3	Participant 4
Age	41	20	24	22
Years of Experience	25	11	10	9
Dominant Hand	Left	Left	Right	Right
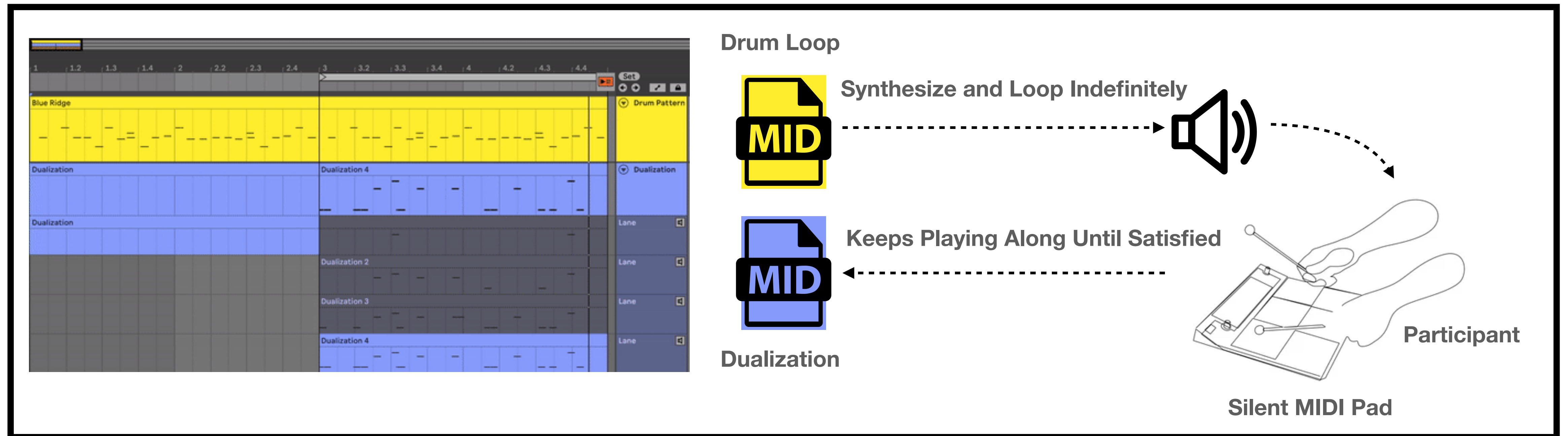
Repeated 1116 Times between the Four Participants

TapTamDrum Dataset

Test Patterns

Groove MIDI Dataset

Recording 1

Recording 2

...

Recording 503

1.Only use 4-4 and Ignore Fills,

2. Ignore patterns that have only 1 or two voices

3. From Each recording, select a 2-bar segment

   with highest similarity to the rest of the segments

   (the most "representative" 2-bar segment)

Patterns to be Dualized

Loop 1	...	...
2	...	...
...	...	...
...	...	345
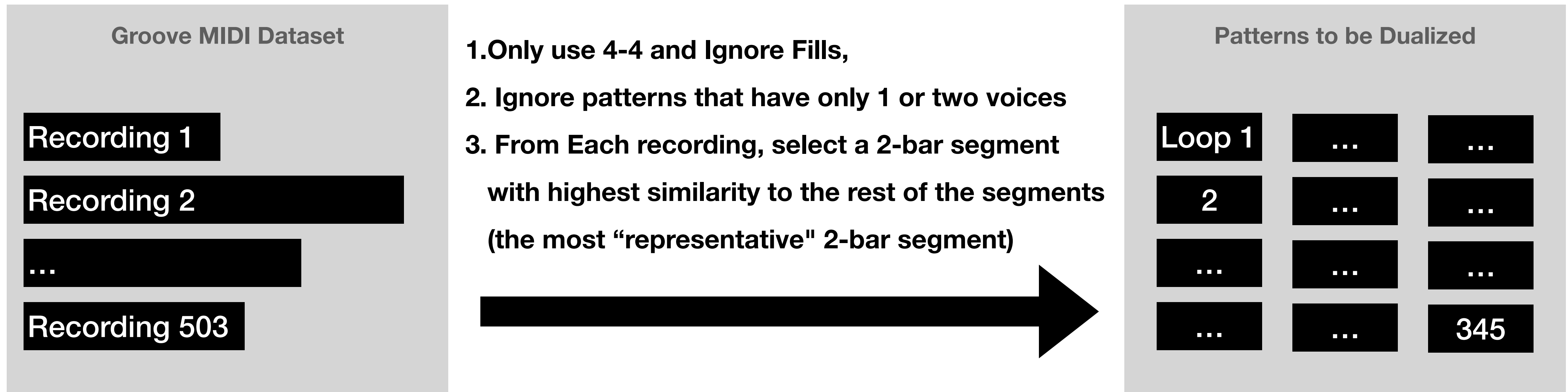
TapTamDrum Dataset
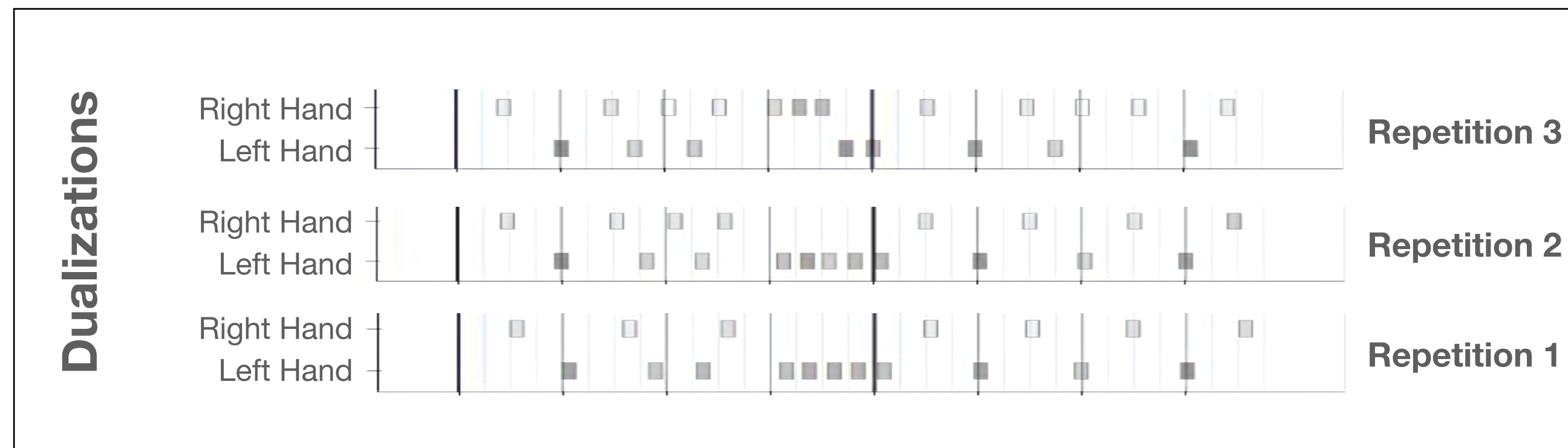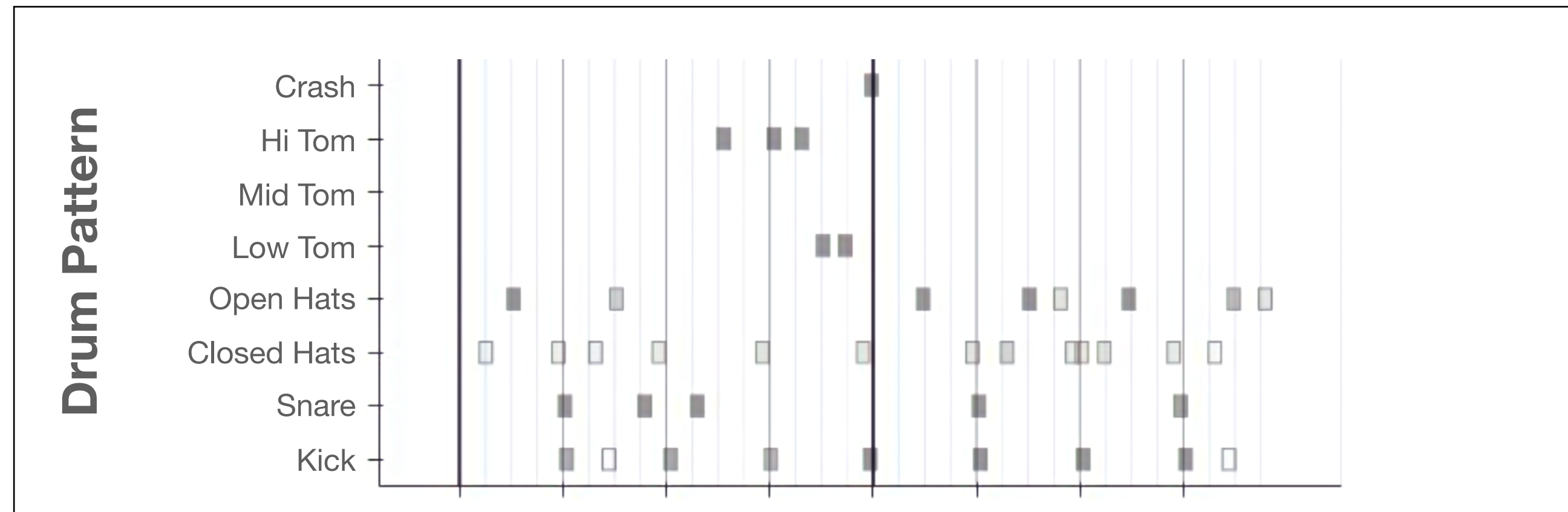
Subset A: Three Random Repetitions

Subset A: Three Random Repetitions

TapTamDrum Dataset

Subset B: Simple/Complex Repetitions

TapTamDrum Dataset

Summary

Subset		Tested Drum Patterns	Repetitions Per Test				Total Dualizations
			Participant 1	Participant 2	Participant 3	Participant 4	
Three Repetitions (A)	Multi-Participant (A1)	24	3	3	3	3	288 (24x3x4)
	Single Participant	48	3	-	-	-	144 (48x3x1)
Simple Complex Repetitions (B)	Multi-Participant (B1)	69	2	2	-	-	276 (69x2x2)
	Single Participant	204	2	-	-	-	408 (204x2x1)
Total		**345**	762	210	72	72	**1116**

https://taptamdrum.github.io/

TapTamDrum Dataset

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Preliminary Insights

Analysis
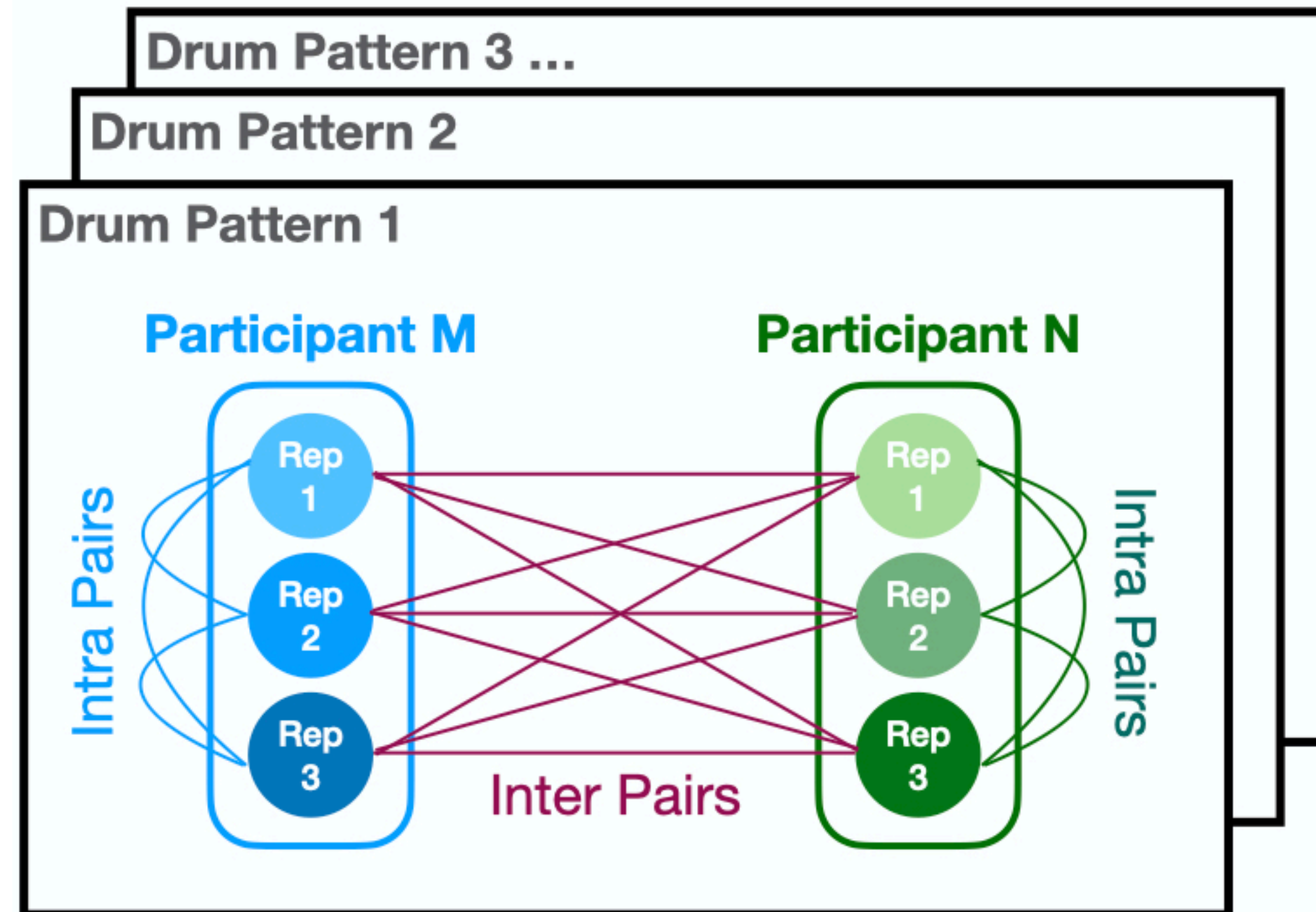
Preliminary Insights

Inter/Intra Analysis

Main Speculations that require further validation:

1. Experienced drummers have a consistent dualized interpretation of rhythms, however, these interpretations vary to some extent compared to other drummers.

2. Complex dualizations are generally more active that the simple dualizations.

3. Unless restricted, the drummers default to more active dualizations

Note: The analysis was conducted on quantized and flattened versions of the dualizations.
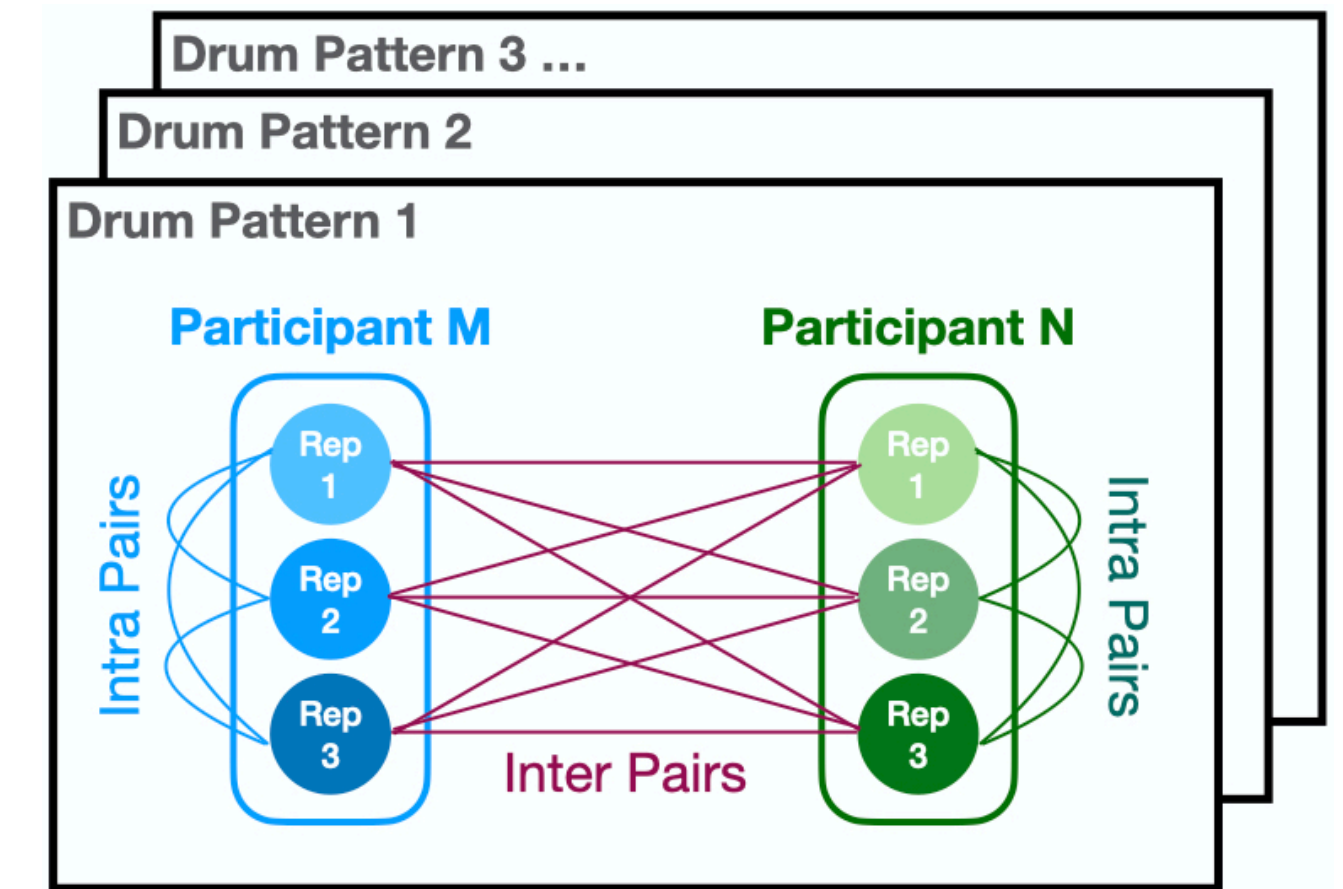
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