

# Unit timing of touching gestures

by  
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## Introduction

- A.) The first words of the paper must thank to Ann Hutchinson Guest and the members of the Research Panel (RP) for reading and commenting an earlier version. The comments determined the author to rethink the original approach – without them the paper would be definitely less in grasp. Comments and criticism will be cited and reflected if it seems needed.
- B.) Each paper has (should have) some underlying concepts. In the present case the concept stems from striving to follow the next ideas:
  - B.1. Notation should be as simple as possible.
  - B.2. Notation can be based on the expert knowledge of the reader.
  - B.3. Notation must reflect the movement values of its subject.
- C.) Being aware that the above points seemingly contradict each other (or better to say, need balancing) this paper concentrates primarily on the first criteria.
- D.) Simplicity needs simple indications and simple rules.
- E.) Simplifying notation is vital. Without it Labanotation can not apply for the role of the written “language” of dance.
- F.) During the past decades the system went through an intensive development in exploring dance movement and in finding the proper indication for them. But the impression is that by today the complexity blocks the spread of the system among those whose work could benefit the most of having been notated: dancers, teachers, researchers. Knowing, understanding and properly using the system now needs many years of special training, and only experts are capable of owning a more or less full overview of the different tools and fields of notation.

## The subject in general

1. While I was working on a textbook for traditional dance teacher training, I realized that our present practice of indicating touching gestures (see entry 18) is unnecessarily complicated. Some simpler ways could be selected – though it seems contrasting certain usages accepted in other approaches.
2. The simpler way was the introduction of *unit timing* for notating all types of movement, including touching gestures as well.
3. RP chair Sheila Marion called my attention that before discussing the subject the term of unit timing itself should be made clear (and her call was reinforced by the other members of RP). She was very right, while we use these concepts, our basic reference books, such as that of Albrecht Knust (1979) and Ann Hutchinson Guest (2005) (later on referred to as AHG) do not give definitions. In Knust’s (1979) book the term is not mentioned. He seemingly applies the concept, though it is difficult to decide, since neither metric nor timing indications can be found in his notation examples. (In the next chapter we can see, that this practice can be regarded as relative timing.) AHG (2005) uses the term of unit timing (e.g. AHG 2005, 183), but does not define.

**(A comment on the compilation)**

4. Papers are usually easier to read and follow if the illustrations are next to the text in which they are mentioned. In spite of that I choose the „old” editing format of collecting notation graphics in separate pages and at the end of the paper. The reason is that figures mentioned in a certain part of the text are referenced more than once, and are compared several times to other ones mentioned elsewhere. To follow the paper the best is to keep text and the examples side by side, that is the paper is easier to follow if printed than reading on the screen.)

**Types of timing – relative, unit, and specific**

5. In the 1991 Proceedings of ICKL AHG (1991, 30) in her detailed study on time signs differentiated three main categories: relative, unit, and specific timing (the latest sometimes mentioned as exact timing).
6. As she stated, relative timing is frequently used in Motif Description. Fig.1 illustrates this timing, there is no „time grid”, only the relative length of the signs can be seen, indicating the relative duration of the represented movement. (The figure was originally identified in the „Time signs” paper as A1. In the following I will indicate in [brackets] the identification of figures in the original source.) In Fig.2 [A2] specific movements are written, and without tempo indication timing of a single movement can be related only to the other.
7. AHG (1991, 30) remarks, that a recent term for „what has often been known as ‘general timing’ is ‘unit timing’.” She continues: „The term ‘unit timing’ is based on the fact that the unit of the basic beat (or its subdivisions) is handled **as an entity...**” (accentuation by AHG). In her example each step and gesture takes one count – see Fig.3 [A3].
8. AHG (1990, 30) notated the same movements using ‘specific timing’ in Fig.4 [A4], „the arrival of the leg gestures on count 2 and 4 has been specifically indicated”.
9. Two further examples illustrated the difference of unit and specific timing in AHG’s paper – see Fig.5 [A5] and Fig.6 [A6]. Here I repeat her words on touching gestures only: „For the hands to clap exactly on the beat of count 1, the arms must arrive forward at the moment, having moved to that destination ahead of the beat. The bow to show the moment of clapping must have its ends within the first square of count 1. ... The terminating touch for the left leg must arrive at the start of count 2.”
10. AHG (1991, 30) stated in general: „In specific timing there is a greater focus on precision in placement of the movements on the ‘time grid’. Unit timing allows a physically comfortable placement of the movements on the time structure; no striving for exactness is demanded. While such performance is not ‘out of time’ it is less focused on awareness of just how each movement is actually placed in relation to the time frame.”
11. (One small remark: it seems more correct using the term „placement of the symbols” instead of „placement of the movements”.)
12. I would add to the explanation of UT that it expresses directly the rhythm of movement. It should be noted as well that this rhythm is not what actually and physically happens, it’s a „sense of rhythm”, how we recognize movement rhythm – based on our movement education.

## Reflections to the concept of UT

13. RP member Anja Hirvikallio in her comments to the first version of this paper expressed her reservation about UT in general. She wrote: „The Unit Timing way of writing should be introduced as an alternative practice later when needed or better should not be introduced at all.”
14. I see it differently. From my research in the field of movement cognition (Fügedi 1999, 2001, 2003) the following can be assumed:
  - 14.1.1. Movements or movement sequences in mind are represented in units.
  - 14.1.2. Movements or movement sequences are initiated by short mental „commands”.
  - 14.1.3. Reading notation needs translation between notation expressions to movement commands.
15. It can be hypothesized, that the inner representation of movement is matching UT way of description. Recognition of UT description and its translation to movement is easier than ST.
16. Attitude toward UT can be influenced by the goal of notation education as well. If the goal is to ease learning and support spreading notation use, education may benefit starting with UT and then introduce ST „when needed”.
17. Perhaps UT cannot serve easy solution for all genres of dance. In my notation practice, where dance movements are very metric, the tempo ranges usually between  $\downarrow = 100 - 220$ , there is a constant change and all the movements arrive on „the basic beat (or its subdivisions)”, UT seems to ease writing, teaching and understanding.

## The subject in details – UT for touching leg gestures and claps

18. The present practice of notating non-touching and touching gestures introduced by Mária Szentpál (s.a.) in Hungary is demonstrated with a simple traditional dance motive ( $2/4$ ,  $\downarrow = \text{cca.}120$ ) in Fig.7a. On count 1 the right lower leg moves backward middle, then on count 2 the leg progresses forward and touches the ground with the heel. In the usual performance in this style the right foot finishes moving to the stated direction right on the beat, at the moment indicated by the measure line or the tick mark. The position of the gesture direction sign refers to UT way of writing in count 1, and ST in count 2. The requirement for ST way of notation in case touching gesture in count 2, the UT notated direction sign for the right leg gesture had to be shortened. This practice is identified here in the following as Mixed Timing (MT).
19. Insisting strictly to one or the other usage (UT or ST) would result in different notation. The same movement structure notated in UT is shown in Fig.7b, and we can see ST notation in Fig.7c.
20. (In the whole paper the identifications of figures follow an order: letter **a** always refers to the present practice in Hungarian notation, letter **b** identifies UT, and letter **c** stands for ST way of notation. Possible differentiations are indicated by apostrophe, especially in cases of UT, e.g. **b'** or **b''**.)
21. Two other characteristic touching gestures can be found in the style: sliding touches, and passing sliding.
22. Sliding touches can be seen in Fig.8a which is now clearly corresponding to a UT way of description (that is Fig.8a would equal an 8b version), and ST version would be as in Fig.8c.
23. A passing sliding variant of the introduced motive can be seen in Fig.9a, which corresponds to the UT way of notation again (9a=9b). Here an ST would look about like Fig.9c.

24. (A short discussion: Comparing so far the **a**, **b** and **c** versions, perhaps there is no doubt, the easiest to read and understand are the **b** ones, applying UT.)
25. An important point to be discussed is, when claps are added to the structures. Since from timing point of view (where to place the bows in time) the problem of claps, leg hits and heel clicks are about the same, only claps are discussed here. For comparison, examples will be shown for leg hits later as well.
26. In Fig.10a two claps in ♩ rhythm are added to the structures of Fig.7 series. Fig.10b' and 10b'' show two approaches for UT, and Fig.10c is formulated as a representative of the ST method.
27. Arm directions are missing now intentionally. In practice statements for arm directions when clapping are not always needed, direction can be taken understood around forward middle, bent about first degree, as in these examples as well. Anyhow, timing of claps has to be recognized without the time unit guidance of support or gesture directions. (Ways of notation with arm directions will be given and discussed later.)
28. Indication of touching leg gestures with foot hooks alone also has to be mentioned. For the sake of discussion the movement structure of Fig.7a is augmented with one touching gesture in Fig.11a, which actually repeats the former heel touch in the same direction. It is agreed that in such a case restating the direction symbol is not necessary (AHG 2005, 183). For UT indication two solutions can be imagined, as in Fig.11b' or b'', and the SP version is shown in Fig.11c.
29. It is also worth investigating the relation of timing when clap is added to a touch indicated with an individual foot hook. In Fig.12a, b', b'' and c a single clap is added on count 3, while in Fig.13a, b', b'' and c the claps are performed in ♩ rhythm on the same count.

### Discussion 1 – Comparison and contradiction

30. What first of all has to be kept in mind is, that in the above examples all supports and gestures are meant to arrive on the beat.
31. There is no doubt about it, that figures with additional letter **c**, the ST versions, provide the most unambiguous solutions for expert notators. Although support indications from timing point of view may have heavy conventions as well (computer animators could tell more about it), from the point of gesture timing ST seems correct.
32. The problem with a consequent ST usage is that it doesn't really help recognizing movement rhythm. The difficulty stems from the different timing of support and gesture symbols. According to our „sense of movement rhythm” in case of movements like shown in Fig.7, 8, 9, 10, 11 and 12 supports and gestures are performed on the count. Writing their symbols „shifted apart” in time is against this natural „sense”, therefore translation of notation back to movement is unnecessary complicated. According to my knowledge no Labanotation practice uses exclusively ST.
33. If we compare Fig.7a, 8a, 9a and 10a, it can be concluded that Mária Szentpál used ST only in the case of „simple” touches, that is when gestures *ended* in a touch, and in all other cases she notated gestures in UT way.
34. Her MT practice led to constant problems in notation education. The exception of ST for terminating touches proved to be hard to remember. Students automatically used UT for notating leg gestures ending in a touch even after years of notation training. Their consequent mistakes reinforce the UT sense of movement rhythm.

35. Recently I changed my notation practice and found, UT is enough for unambiguous notation of traditional dances. Though for coherent notation some clarifications are needed and conventions agreed. (Examples will be mentioned later – see entry 92 and Fig.32-38.)
36. For those, whose notation practice includes dances where the correspondence to music is strong, that is the dance is very rhythmic, and rhythm regularly subdivides into two, three or sometimes even into four parts the basic beats, such UT version of „floating” foot hooks as in Fig.11b”, or „floating” bows as in Fig.10b”, 12b” and 13b” are disturbing and makes understanding rhythm difficult.
37. Horizontal bows by their nature are means for ST. There are no other signs in Labanotation which are assigned expressing a specific moment, and this feature is stressed by the graphical appearance, the free end points of the bow. All the other signs (the only exception is the sign of 1/8 ball, a small horizontal line) have certain vertical extent, even those, where the vertical extent doesn’t carry timing content (space measurement, body areas, body parts, etc.).
38. The „floating” placement of bows as in the mentioned b” figures not only takes away their inherent ST nature, but also makes rhythm recognition unnecessarily complicated.
39. What’s more, this practice can lead to misunderstanding. It’s difficult to realize, that the rhythm of the clap and the touch of the heel coincides with the support rhythm on count 3 in Fig.12b”.
40. It’s even more circumstantial – if not impossible – to identify the rhythm in Fig.13b”, where the foot hook appears between two „floating” bows. The only „guide” is the support itself – but what if there is no direction sign for support?
41. Fig.14 series match Fig.13, except in count 3, where now the support is held. It’s especially difficult to state the rhythm of claps and leg touch in Fig.14b”, represented by „floating” bows and hook again. When is the clap and the touch? Which one is performed on count 3 and which on 3&?
42. But, insisting to the ST nature of the bow as in count 2 of Fig.10b’ may raise a question about the different timing of the bow at the start of count, and that of the hook at the end of the direction symbol for the leg – though both happen at the same moment, exactly on count 2.
43. Even if the definition of UT says that „the unit of the basic beat ... is handled **as an entity**...” all the textbooks (and all publications following their directives) assign time significance of where to place the hook on the direction symbol. It’s inevitably a contradiction.
44. For terminating touches the hook is agreed to be placed at (around) the end of the direction sign.
45. Sticking to this consensus of writing and at the same time calling my attention to the understanding of UT, AHG and almost all members of RP (S. Marion, J. Challet-Haas, N. Simonet, and S. Saint-Smith, except A. Hirvikallio, certainly because she refused accepting UT practice) noted the contradiction of placement of the clap bow and the hook in Fig.10b’.
46. But why has to be the hook placed at the end of a resulting touch? Why isn’t it all the same where the hook is attached to a direction sign, once „the unit of beat is handled as an entity”? Why can’t it be placed in the middle or right at the beginning of the direction indication? The reason is the following.

## Timing indication of touching the floor with the leg

47. Knust (1979, 215) in his entries 535.a-c declares the timing significance of a foot hook on a gesture indication. He states: „The point on the graph where the touch sign is placed indicates *the moment when the touch takes place*. In a slow leg gesture resulting in a touch, it should be observed whether the touch happens at the beginning, the middle, or the end of the movement.” Therefore Fig.15 [Knust 535a] means „touching at the beginning of the gesture, when the free leg is still behind the supporting leg”, Fig.16 [535b] is for „touching the middle of the gesture, when the foot is approximately beside the supporting leg”, and Fig.17 [535c] represent „touching at the end as a result of the leg gesture”.
48. (Let me point out here a slight contradiction: The first (general) statement said: „... gesture *resulting* in a touch...” and now „*resulting*” is indicated by italics, because it seems contradicting Knust’ 535a and 535b statement, where the touch is not a result of the gesture but must be a passing (or transient) state. The general statement is true only for Knust 535c.)
49. Labanotation in its early form did not give importance where to place the foot hooks on a direction sign. In the first edition of LN reference book Ann Hutchinson (1954, 124) joint the hooks to the middle of the symbols as shown in Fig.18 [197a].
50. The time significance for the hooks indicating touches were raised at the 1961 ICKL conference, and some years later (it is uncertain exactly when) Labanotation accepted the usage (Rowe, Venable & Van Zile, 1993, 41), presumably stemming from Knust.
51. In later editions of Labanotation essentially the same usage and example is repeated as shown in Fig.15-17 (e.g. AHG 2005, 182-183).

## Discussion 2 – Doubts and an axiom

52. *Doubt 1: is it possible to perform what was notated in Fig.15 and 16?* Is it possible performing a simple „transient” touch without sliding the floor when the leg is continuously moving? If the leg is changing direction while touching, the touch *must* be sliding, especially if the gesture is slow. However, it can be true, these types of touches may differ in how long the sliding lasts, but I am positive, the so called „transient” touches belong to the class of sliding ones.
53. *Doubt 2: is there a need to indicate „transient” touch in dance at all?* I tried to find indications for „transient” touches in published notation sources, that is when a single foot hook is inserted at the beginning of a leg direction. I haven’t found one in sources representing dance genres of ballet, modern or traditional, e.g. Christ (1994), Humphrey (1992), Hutchinson (1979), Schurmann & Clark (1972), Van Zile (1982) (well, the list is definitely limited in number). Schurmann & Clark (1972) gives in inner cover of the book a collection of touching gestures, where the possibility in question, a single hook at the beginning of a direction sign is not included. But two short tap dance examples served precedents in AHG (2005, 193-194).
54. Tap dance is regarded a style, where its extremely fast touches may produce the imagined „transient” quality. A slow motion investigation proves though, that all touches which happen at the beginning of progressing into a direction, are sliding ones in tap dances as well.
55. Perhaps a movement analytical axiom for „transient” touching gestures can be formulated: *a continuously moving, active body part can touch a passive object only with sliding.*

### Discussion 3 – a consequence, which leads to coherent UT indication

56. For UT the above finding may have a consequence: UT can be liberated from the timing significance (bound) of where to write the foot hook on a direction symbol within a time unit in case of resulting touches.
57. Therefore, all the solutions of Fig.19b', b'' or b''' can be accepted as UT notation of resulting touch in count 2, which was so far written as Fig.7b.
58. Let's return back to the contradiction where the above investigation stemmed from, to the example of Fig.10b'. Coherent solutions can be found now by selecting Fig.19b''' – from different aspects. The Fig.10b''' version shows that the placement of the hook and the bow of the clap now meet. (For easier comparison Fig.19b''' is repeated in one line with all the other b''' solutions on page 13.)
59. Beside hook–bow rhythm correlation, placement of the hook as in the Fig.19b''' results in another coherence. In Fig.11b''' the position of the hook placed at the beginning of the direction sign corresponds to the position of the hook when direction is understood as in the last beat.
60. The solution matches former recommendations for bow placement in Fig.12b' and 13b'. In Fig.12b''' the position of the clap and hook is corresponding to each other as well, and the bow doesn't have to lose its ST nature. In Fig.13b''' the  rhythm of the claps is clear, and it is unambiguous that the heel touch happens on the beat.
61. Rhythm gets also clear in case there is no UT guidance from the directions signs, e.g. there is no support indication. The ending support structure of Fig.14 series is applied in UT delegates Fig.20-22. It's easy to state now that the right heel contacts the floor on count 3 in Fig.20. In Fig.21 the heel and the first clap is performed unison on count 3 and there is a second clap on 3&, while in Fig.22 a clap is performed on count 3, the heel contacts on 3&.

### Subject continued – problem with arm directions

62. One dependent subject remained – the relation of clap bows and the directions of the arm.
63. Fig.23a, b', b''' and c represent the same motive set as in Fig.10 series with the difference, that arm directions are added (and, instead of Fig.10b' the above introduced b''' version is applied, and for keeping the former order of figures, b''' is placed where b' was before). The first clap is performed in front of the body, the second behind.
64. For a discussion I constructed one more example with this basic leg structure, that of in Fig.24a, b', b''' and c, where the claps follow a  rhythm.
65. The problem is colored with a special feature of the traditional dances of the area, the *leg hits*. A structurally similar, though slightly different movement sequence of Fig.7a is shown in Fig.25a (Mária Szentpál's way of notation). UT would look like 25b' or perhaps as 25b'', and 25c shows the consistent ST way of notation. Since the timing problem of the bows with hits is the same as with claps, leg hits are not discussed further.

#### Discussion 4 – clap bows and arm directions

66. Since a clap is a resulting touch as well, in MT notation of Fig.23a the arm directions are written in ST. In count 1 it results in a „shifted apart” timing in the same count even for gestures. Arms are written in ST, the right leg gesture in UT, while leg and arms arrive to their end points at the same moment.
67. Fig.23c is consistently correct in its „ST-ness”, though – as mentioned above – the timing of movements is difficult to realize.
68. Fig.23b''' and b'' differ only in the placement of the bows, arm directions are written according to the understanding of UT. In Fig.23b''' the placement of the bow reflects its ST nature, that is the bows appear near to (at) the beginning of the beat. In Fig.23b'' the bows are written in a „floating” way.
69. Fig.24a-c repeat almost exactly the motives of Fig.23a-c, except the rhythm of the clap is changed to ♪♪ instead of ♪ in count 1. Notice the way of expressing rhythm in Fig.23b''' and 23b'', where the ♪ length of arm direction emphasizes the ♪ + ♪ rhythm and helps recognition.
70. The possibility or proposition of arm-bow relation in Fig.23b''' was strongly questioned by RP members. A. Hirvikallio called attention to the mixing of UT – ST concepts, S. Saint-Smith preferred to avoid mixing conventions, and J. Challet-Haas and N. Simonet definitely rejected it „as a «mixture» leading to misunderstandings”.
71. AHG in her reply to the first version of the paper explained her opinion a bit more detailed. I cite it (only the identification of figures are changed to match this paper): „While I do like ET, for these movements (Fig.26) we should be able to accept UT for them as we already do for touching leg gestures (Fig.28). Thus example Fig.27 should mean that the clap and the arms arriving forward middle should both occur on count 1. To my knowledge it has never been openly agreed to use the timing of Fig.27, but I don't see why it could not be seen as the UT equivalent of Fig.26.”
72. RP members Challet-Haas and Simonet confirmed this approach: „We would definitely stick to ...Fig.23b'', as possible...” (the identification of the figure is substituted).
73. In other words AHG, Challet-Haas and Simonet all agreed that the placement of arm direction can follow UT, and were in favor of the „floating” use of the bow. The reason was expressed by AHG: „as we already do for touching leg gestures”.

#### Culmination and the proposed usage

74. The majority of RP (with one refusal) seemed to agree that UT is useful.
75. A contradiction of UT practice culminates around the placement of the bows and hooks.
76. Argumentation of RP members is based on a widespread use and convention of notation practice for terminating touches („as we already do for touching leg gestures”) indicated here first in Fig.7b count 2, last in Fig.27.
77. Motivation for and validity of this practice was strongly questioned in this paper (Discussion 2 – Doubts and an axiom).
78. If this „bond” is freed, UT usage can be simpler and more consequent in case of touching gestures.
79. It should be noted, that for touching leg gestures *within* a time unit only the class (type) of the touch needs indication, timing can be concluded from the direction sign. E.g. one hook: resulting touching gesture – Fig.29, two identical hooks: sliding gesture – Fig.30, two different hooks: rolling sliding gesture – Fig.31 (not all possibilities are mentioned

- here). Actual performance is influenced by the class of touch, the tempo, and gesture position to start the movement from.
80. This paper wanted to call attention that strictly consequent use of both UT or ST can lead to difficult rhythm recognition.
  81. Throughout the paper figures with additional mark **b''** are those usages, which I propose.
  82. Perhaps the paper was not, the underlying concept is simple: it proposes using UT for gestures represented by signs which are capable expressing time by their longitudinal dimension (e.g. directions, action strokes), while for indications with inherent „ST nature” (such as bows and hooks) ST should be kept.
  83. Simplified to bare bones: *UT for stretchable signs, ST for moment indications.*
  84. The proposed solution experiments with uniting the advantages and eliminating the drawbacks of UT and ET:
    - 84.1. Advantage of UT is the easy recognition of rhythm through sign extent.
    - 84.2. Weakness of UT is the uncertain bow (hook) position.
    - 84.3. Advantage of ST is the exact bow (hook) position.
    - 84.4. Drawback of ST is the support – gesture „shifted apart” timing indication.

## Reasoning

85. The proposed usage doesn't stick strictly to one or the other concepts, but uses from both which seems beneficial from the point of easy perception while no notation value has to be given up.
86. No real language is strictly logical. The KIN/LN system also mixes concepts when uses motion description for locomotion and turns, but destination notation for gestures or gesture-like movements. Even this logic is violated sometimes, when motion description is used for gesture notation (e.g. approaching: AHG 2005, 298, design drawing: Hutchinson Guest – Haarst 1991, distal analysis: AHG 2005, 393). Each solution has its advantages when used the right way and disadvantages if not.
87. While destination description serves well, a heavy convention is built into it. When we use destination notation for a gesture, we usually notate the *result* of the movement, not the movement itself. It is like drawing „key-frames” in cartoons, „snapshots” of the positions where to arrive, when the movement is finished.
88. In UT the „key-frame” indication starts *when it has already been finished*, and is elongated to express the sense of rhythm. What is expressed this way from timing point of view is actually the time during which the dancer can prepare for and perform the *next* movement (to get into the next „key-frame”). Strange enough, still UT description meets our mental timing representation of movement.
89. In ST the notation of end result (the „key-frame”) begins where the movement just starts but not finished. Actual performance depends on from where, from which spatial position the movement is initiated to arrive into the ahead established „key-frame”.
90. (A remark: many of our notation problems stem from the fact, that what modifies an understood performance has to be indicated on or next to the notated *end result*. E.g. what is added to an indication, such as spatial deviations, one or more hooks, influences *how* to get into the stated „key-frame”.)
91. While in a consequent ST notation the „shifted apart” direction indications complicate rhythm recognition, in a consequent UT notation (given in figures identified here with letter **b''**), understanding needs similar timing „conversion” as in ST, but in the other direction. „ST nature” bows are „shifted apart” from where they happened.

92. „Taste pie to test” – for comparing methods, movement sequences from my notation practice are presented in Fig.32-38, notated in three ways: „as we already do for touching leg gestures”, consequent-believed UT (indexed as b), pure ST (indexed as c) and the proposed „advantage selecting” one (indexed as d). All supports, claps, leg hits and heel clicks happen exactly on the beat. Try to read them without bound to what is accustomed. Decide, which gives the clearest picture, which description is the fastest to understand, which one is the easiest to recognize rhythm from.

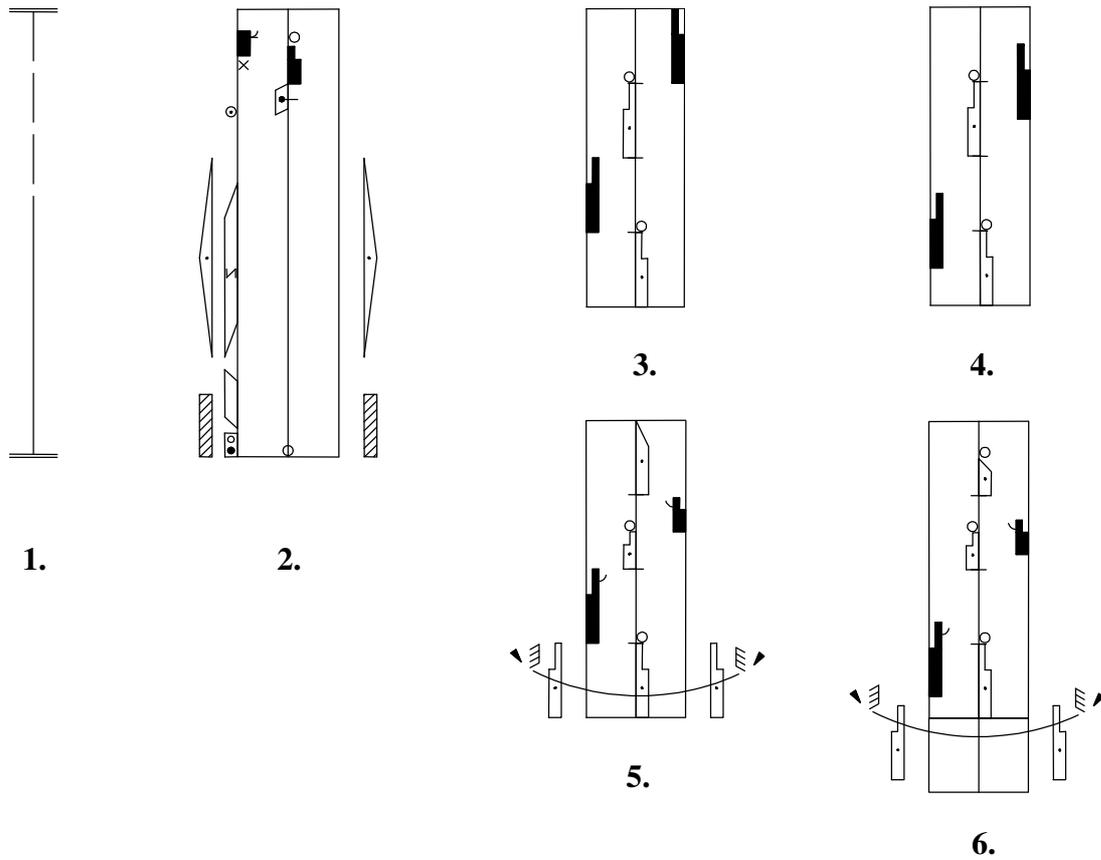
### Closing remarks

93. Exploring the ways and conventions of UT notation needs further, thorough investigation – the present paper can be regarded only a step into this direction. Certain further questions (such as understanding of touching gestures longer than a time unit, sliding gestures ending in a hit, and perhaps the most important one, the result-centered description of, e.g. rotations) were intentionally taken out of the scope of the paper.
94. Though, at the beginning of UT exploration, but after 20 years of notation practice I feel that well-structured, metric dances, where movements arrive on the beats (most of the traditional dances meet this criterion), do not need ST. Their movement content can be notated with high fidelity using UT.
95. I hope, this way the notation gets simpler and perhaps it will better achieve to be used in a wider circle than that of a very limited number of choreologists and some specially trained expert teachers.

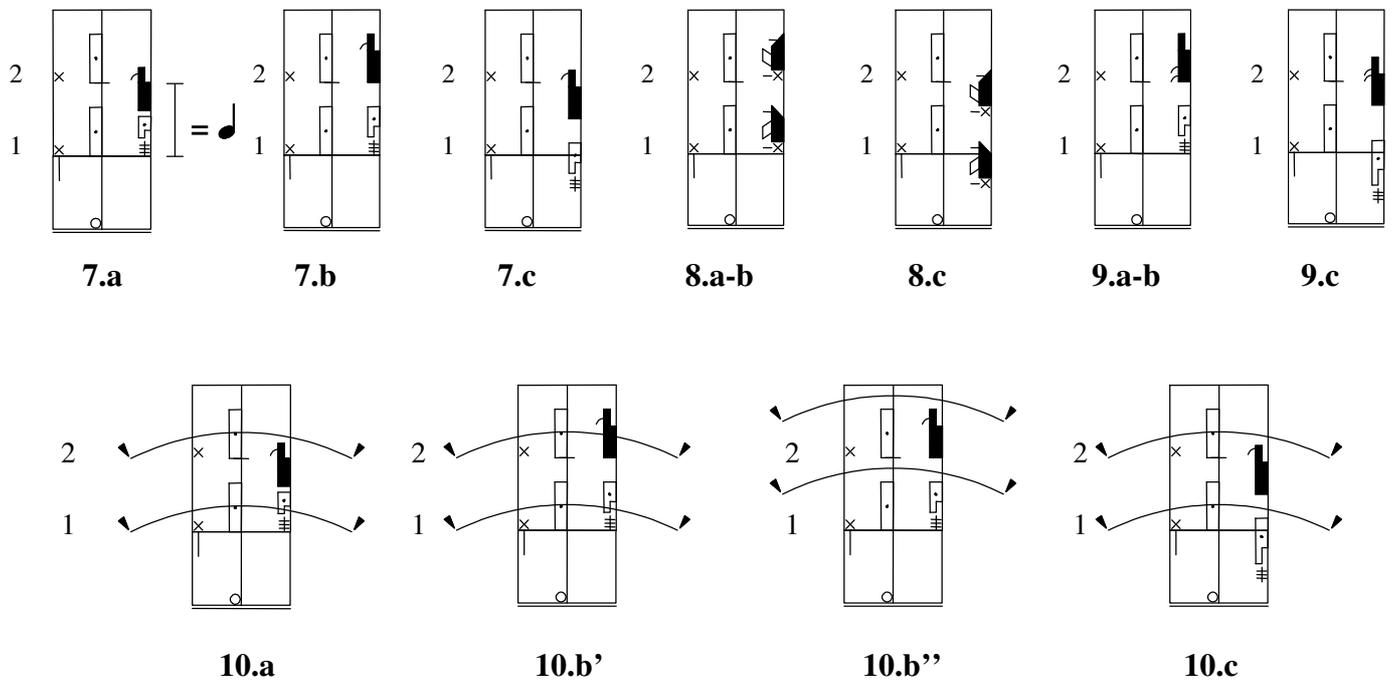
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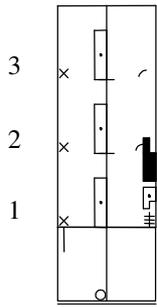
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Figures

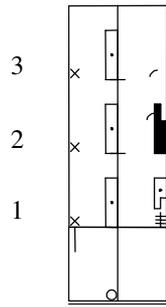


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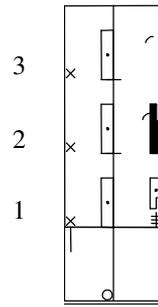




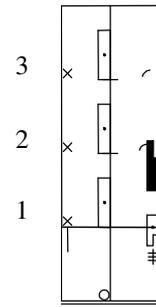
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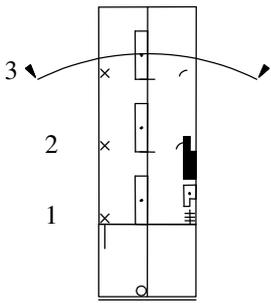
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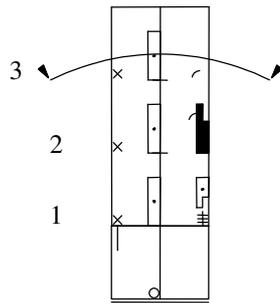
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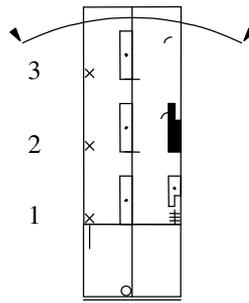
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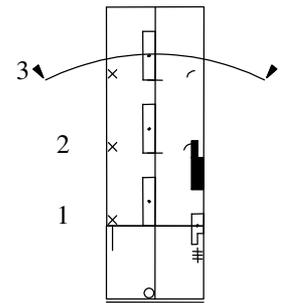
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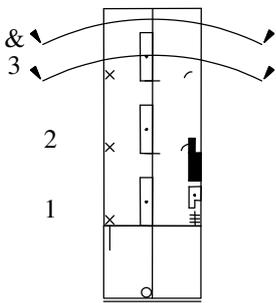
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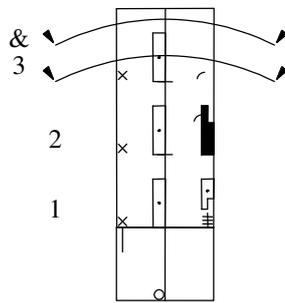
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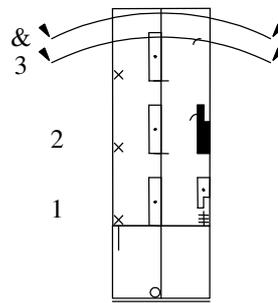
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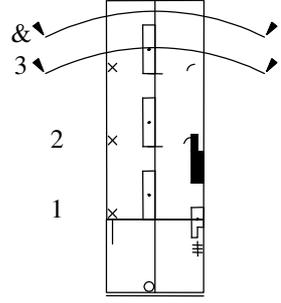
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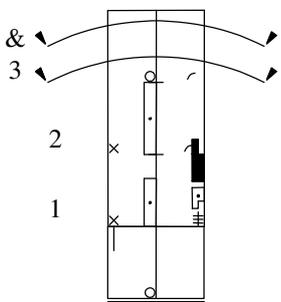
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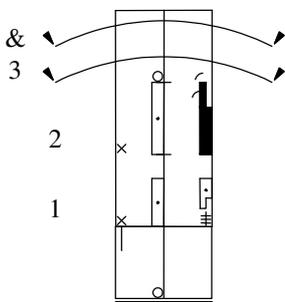
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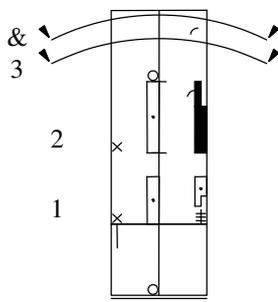
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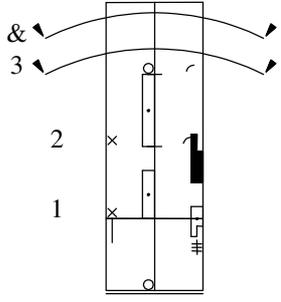
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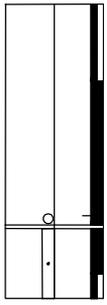
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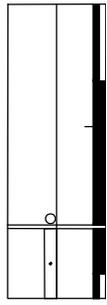
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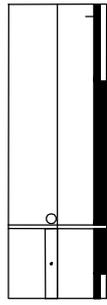
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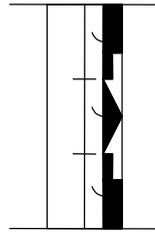
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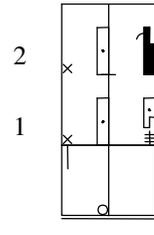
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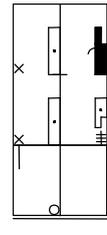
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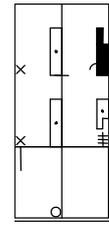
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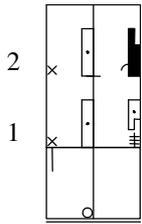
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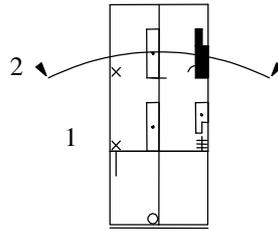
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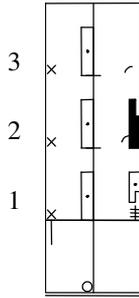
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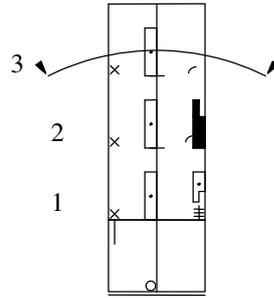
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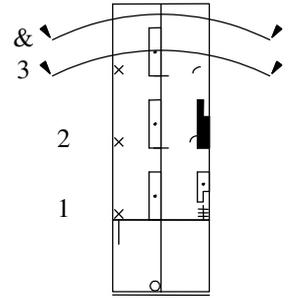
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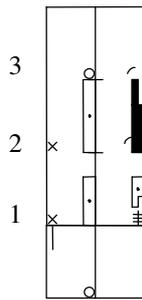
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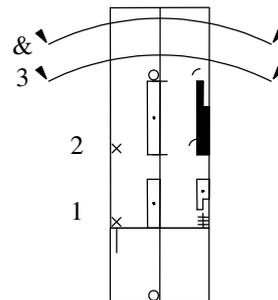
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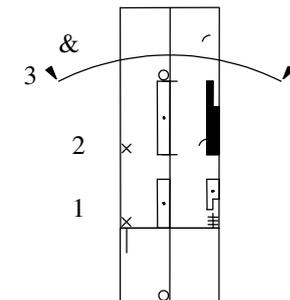
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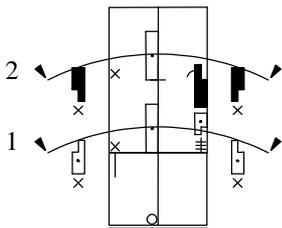
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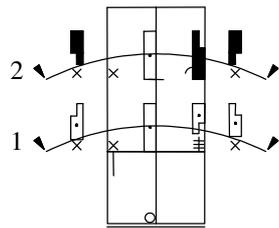
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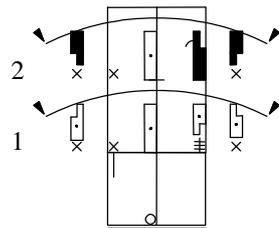
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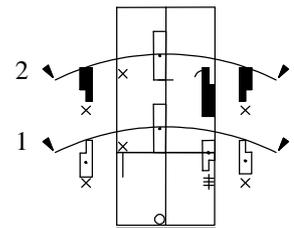
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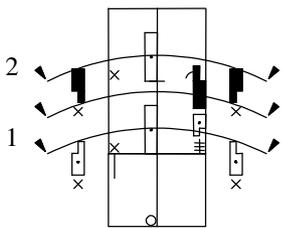
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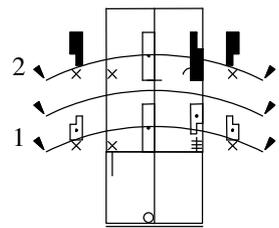
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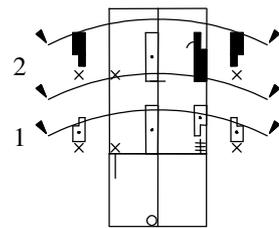
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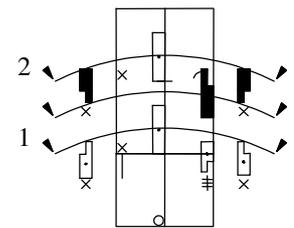
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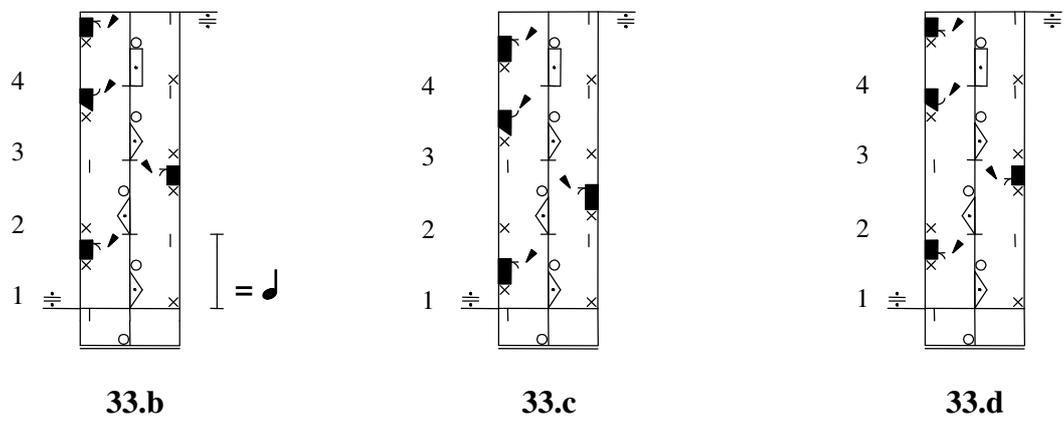
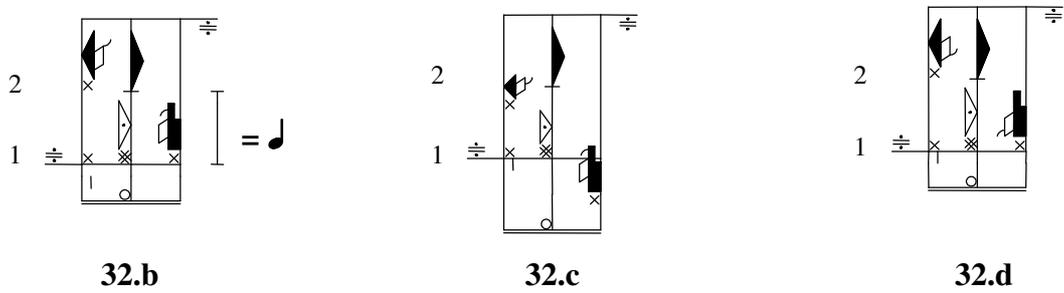
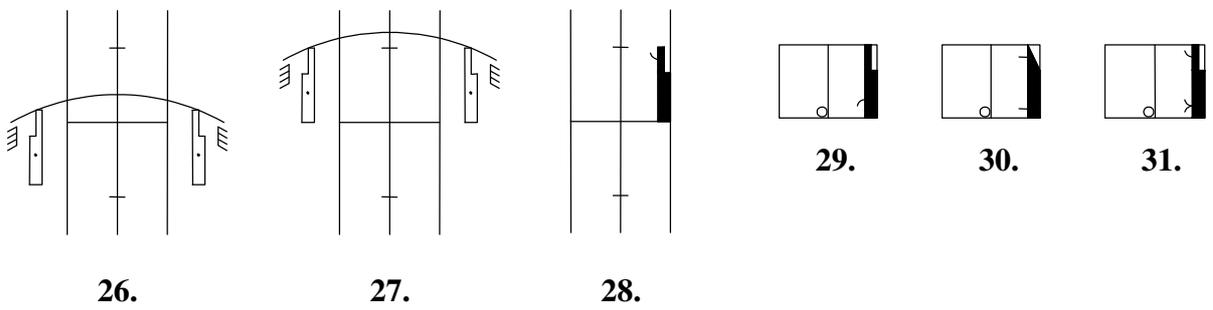
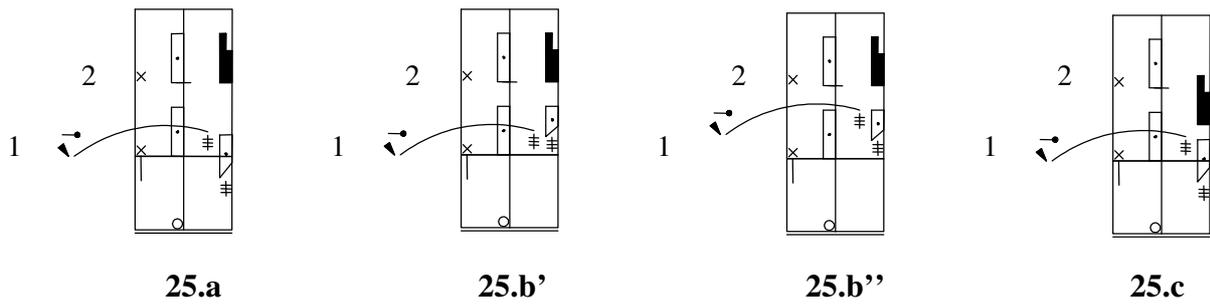
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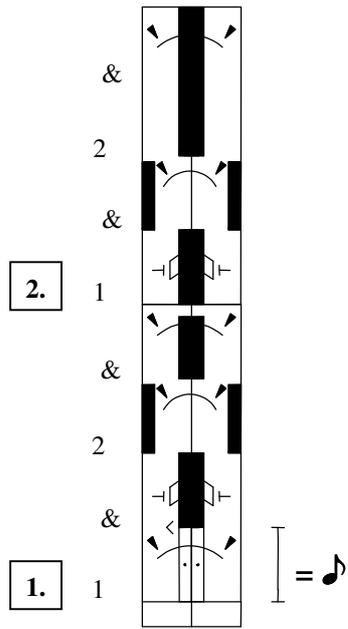


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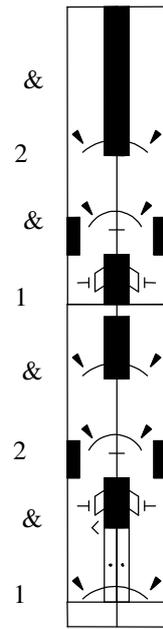


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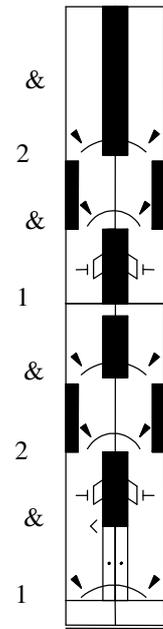




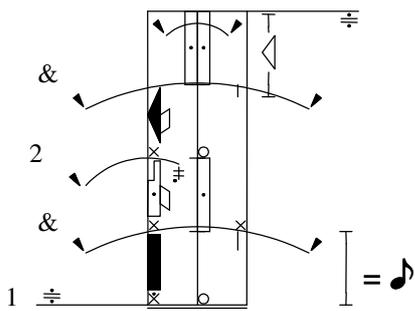
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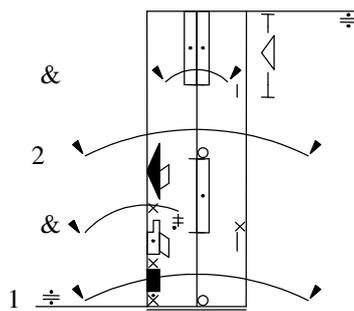
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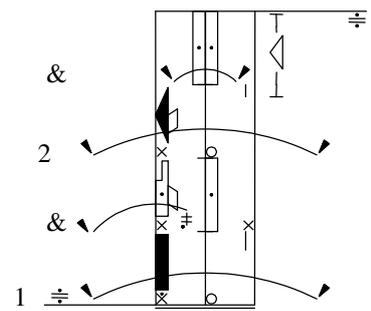
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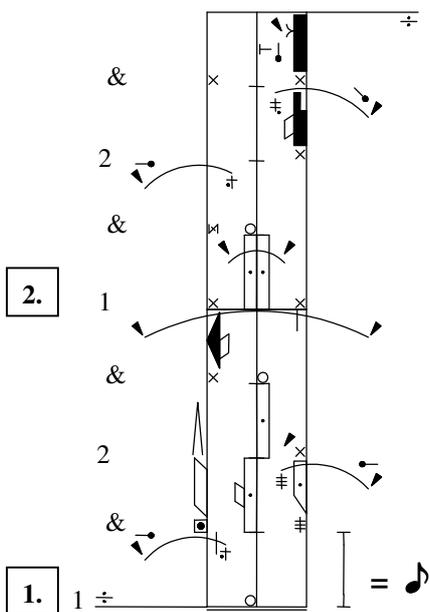
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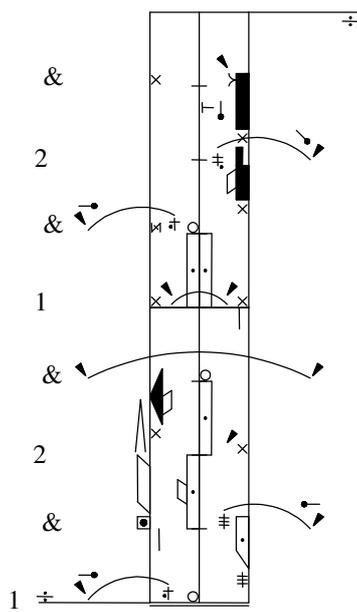
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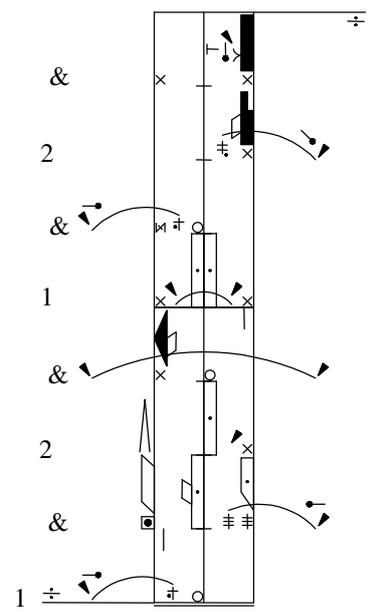
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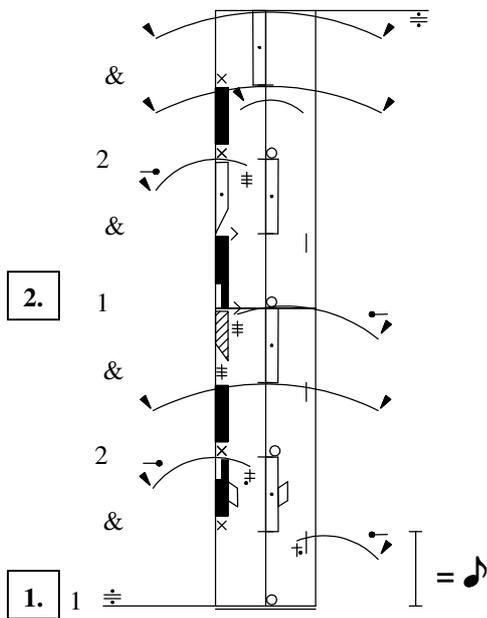
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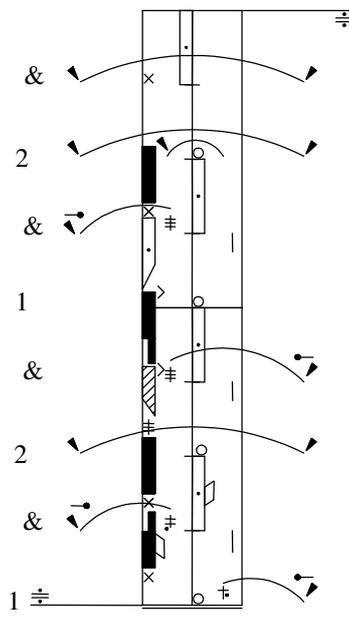
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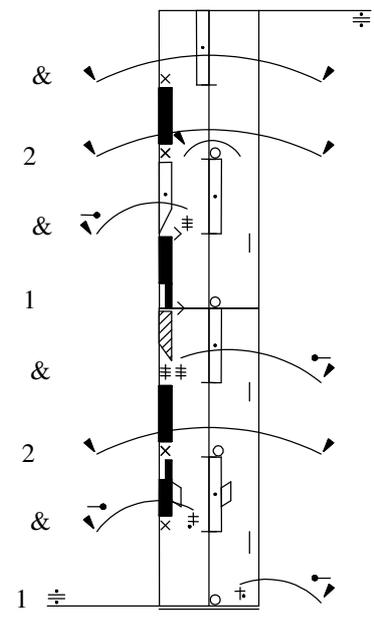
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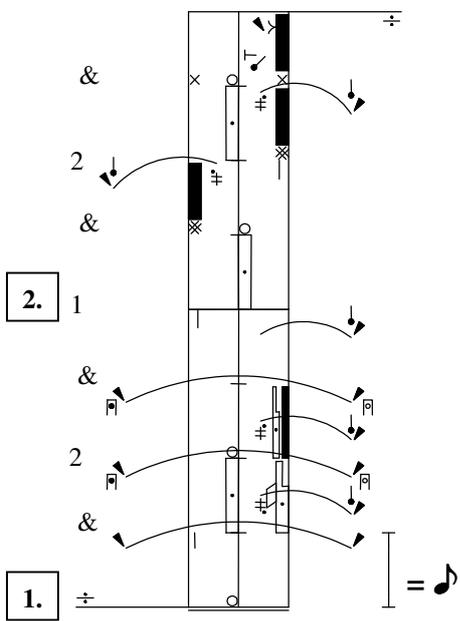
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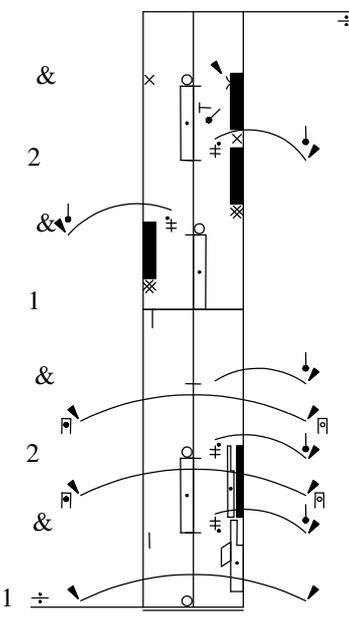
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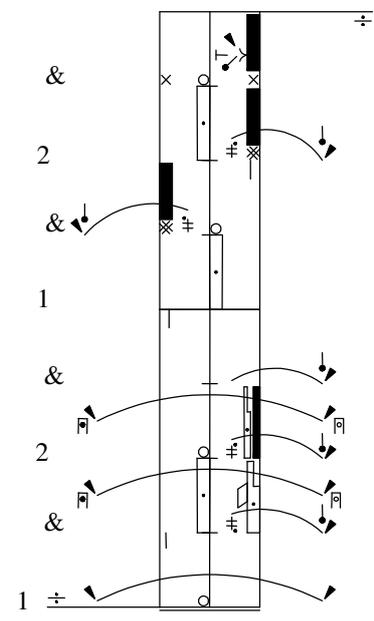
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38.b



38.c



38.d