

**THE DIFFERENCE BETWEEN THE FACTUAL AND  
DANCER'S INNER REPRESENTATION  
OF MOVEMENT RHYTHM**

**JÁNOS FÜGEDI**

*The research was supported by the Hungarian Scientific Research Fund (OTKA NK 77922).*

When I proposed a simplified way of notating touching gestures at the 2007 ICKL conference<sup>1</sup>, I mentioned as a reason, that even the best students – after a three year notation training – usually missed the current rule. Some present expressed opinions on their lack of education.<sup>2</sup> Even though my educational experience questioned this reaction and assigned the reason to inner rhythm representation, this assumption could not be proved that time. 2007 raising the problem of touching gesture notation led to the conclusion, that the subject needs a wider investigation both thematically and historically, so for the 2009 ICKL conference Gábor Misi and I compared the different views of notation theory, summarized all the known types of floor touching gestures with the foot, beyond the already existing „unit timing” and „exact timing” ways of notation we introduced the notion of „rhythm expressive timing” (or „rhythm timing” as Ann Hutchinson Guest identified it shortly at the 2011 ICKL conference), and lined up three visual criteria expected in notating touching gestures.<sup>3</sup> The non-finished research resulted multiply solutions in the so called „rhythm expressive timing”. At the end of Fügedi–Misi’s paper it was expressed, that for an established proposal the reasons of earlier changes in the system have to be discovered deeper, all types of touches have to be analyzed, and the above mentioned assumption on the difference between the factual and the dancer’s inner representation of movement

<sup>1</sup> János Fügedi (2007): Unit timing of touching gestures. Proceedings of the Twenty-Fifth Biennial Conference of ICKL, 33-48.

<sup>2</sup> In writing it appeared on the blog of DNB Theory Bulletin Board. Billie Mahoney (2011) wrote: „... Janos’ paper to change transit contacts to accommodate his beginning students”. The internet addresses of the blog is shown at the end of the present study.

<sup>3</sup> János Fügedi - Gábor Misi (2009): Ways of notating floor touching gestures with the foot. Proceedings of the 26th Biennial Conference of ICKL, 43-60.

rhythm should be investigated. The research presented here investigates this assumption in the frame of a survey among university students of dance programs with notation tasks. The research was supported by László Bernáth psychologist, university docent at the Eötvös Loránd University, Faculty of Education and Psychology, Budapest. When the subject was presented at the 2011 ICKL conference, Judy van Zile called my attention, that the results can be related only to the movement cognitive behavior of dancers trained in Hungarian traditional dances, since all the students were trained this dance genre.

### The tasks

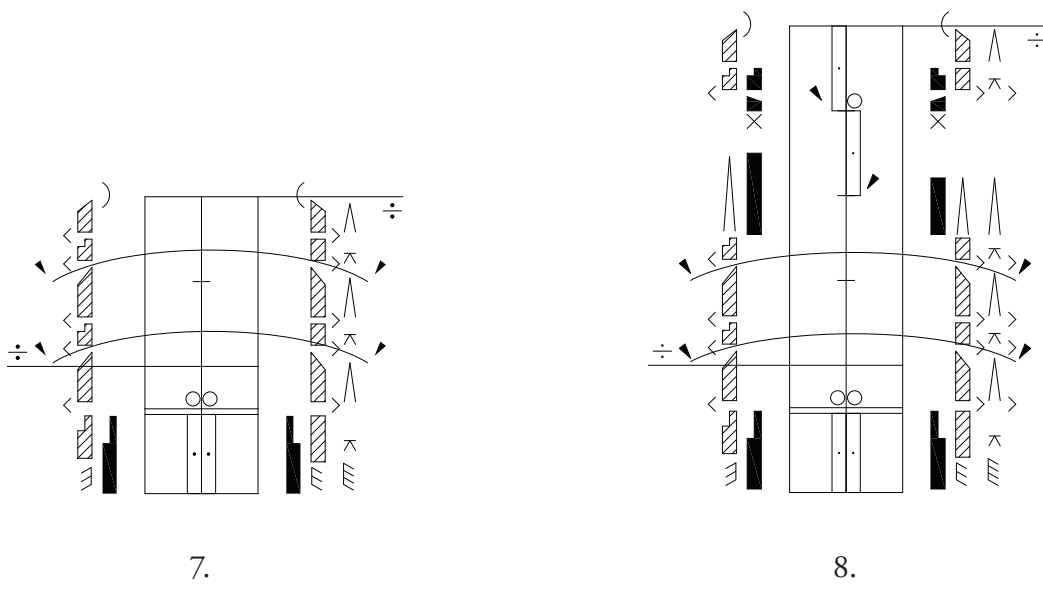
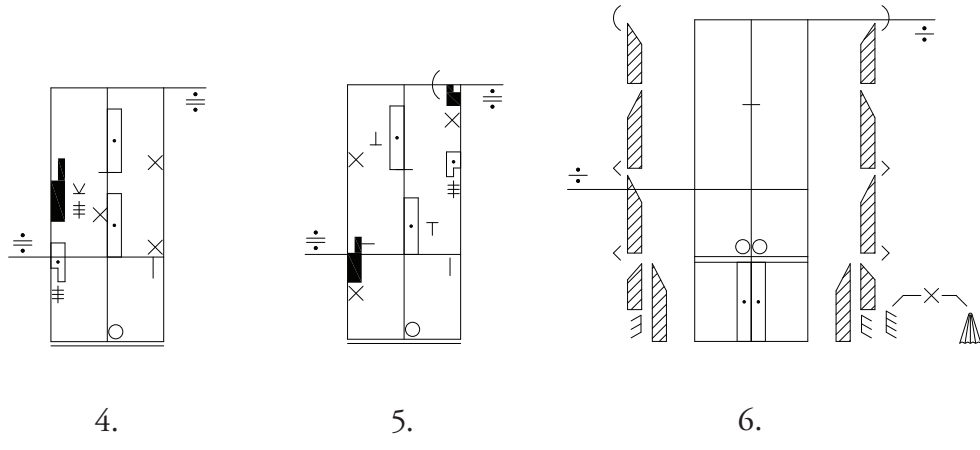
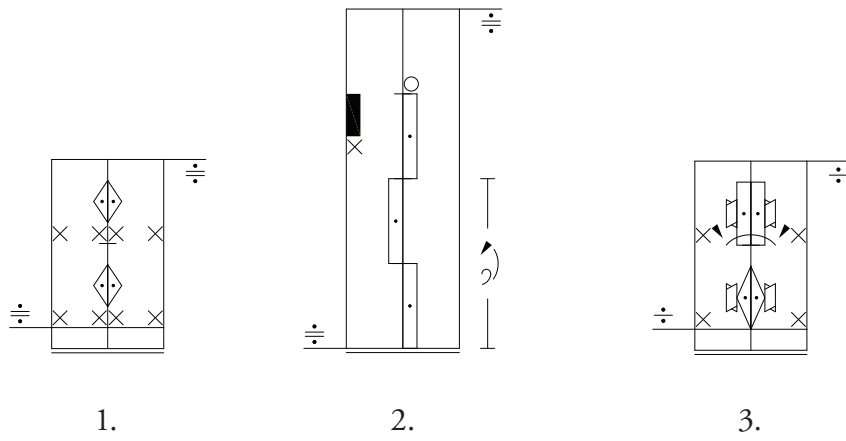
The tasks were solved by 46 traditional dance students at BA level for dancer and MA level for teacher training at the Hungarian Dance Academy and 6 dance anthropology students at MA level at the Szeged University. The altogether 52 participants included 33 female and 19 male amateur and professional dancers, their dance training ranged from 7 to 26 years. Past dance training was an important factor of selecting the participants, assuming, that it built a movement and rhythm image (inner representation) acquired during former dance studies. In respect to dance genre and technique, all were trained in traditional dances, especially that of Hungarian one. All had a minimal movement analytical ability to distinguish support, gesture and contacting movements.

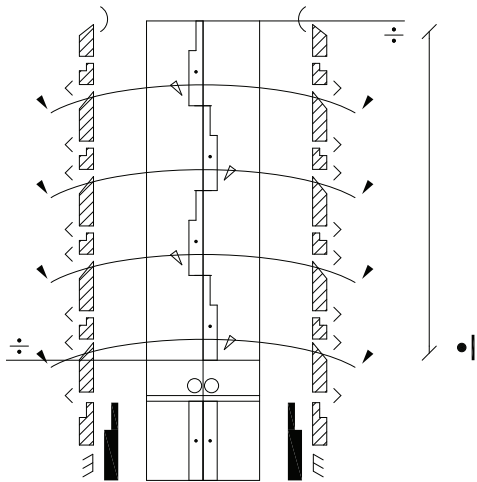
The task was to define the movement rhythms of 12 short motives selected from traditional dance education methodology film publications<sup>4</sup>. The clips were presented on computer by the PowerPoint software. The notation of motives can be seen on Fig. 1-12, for the sake of unambiguous recognition all (not only the touching) gestures are notated in „exact timing”. (Their dance type or technical character are listed at the end of the study.) The rhythms of the movements were uniformly ♩ in all the motives. In Task 1-3 (Fig. 1-3) only steps and springs (that is only support movements) were performed. In Task 4 and 5 (Fig. 4-5) leg gestures appeared simultaneously with supports, Task 5 was almost identical with Task 4 except the forward leg gesture touching the floor. In Task 6-7 arm gestures could be seen, Task 7 represented claps (gesture with contact). In Task 8 two claps were followed by two steps, in substance the gestures were separated temporally from the support movements, while in Task 9 claps were performed simultaneously with steps. In Task 10 a clap beneath the simultaneously forward lifted leg could be seen. Task 11 represented a leg hit, a contact between two independent body parts, namely the arm and the leg.

<sup>4</sup> Péter Lévai– János Fügedi (eds.): Néptáncaink tanítása – Ugrós táncaink [Teaching our traditional dances – Ugrós dances]. DVD video. Planétás Kiadó, Budapest, s.a.

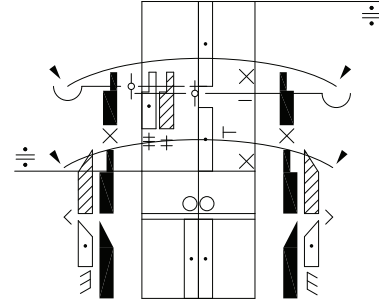
Zoltán Farkas: Néptánc alapszabványok módszertana. Ugrós – Lakócsai táncok – Kalotaszegi csárdás. [A methodology of traditional dance techniques. Ugrós – Dance from Lakócsa – Csárdás from Kalotaszeg] DVD video. X-produkció, Budapest, 2008

The clips edited into one file can be downloaded from the site [www.zti.hu/tanc/rhythm](http://www.zti.hu/tanc/rhythm). Attention must be called that the server might not be reached forever.

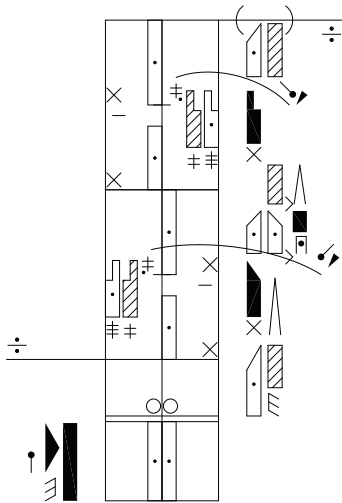




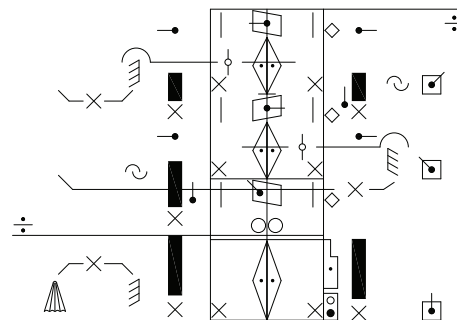
9.



10.



11.



12.

In Task 12 the performer passed a handkerchief from one hand into the other alternatively, beneath his legs, while alternatively turning a small amount right and left and jumping from both legs to both legs. Consequently the tasks were simple rhythmically, but got more and more complex spatially, included more and more body parts, and contact appeared in a more and more complicated context.

To discover how the students think of the *temporal situation* of movements compared to the beats, they were given task sheets with a Guide for Filling as shown in Fig. 13. The movements had to be represented with horizontal arrows as the explanatory figure wanted: represent length of arrow the length of movement, the dot on its left side the start of movement, and the head of the arrow the end of movement.

The arrow had to be written in the horizontal row of the corresponding body part moving. The placement of the arrows was structured by the bar lines of 2/4 measures and tick marks indicating the beats, but far more space was left for the indications as a single motive needed. The ♪ musical notes above the beats appeared only in the Guide for Filling.

The film clips were presented for student groups attending the same classes at the same time. A clip was played until all indicated the completion of the task.

Indicate with horizontal arrows the rhythm of the observed movements. Place the arrows into the rows of the appropriate body parts. Represent the length of the arrow the length of the movement, its start the start of the movement, and its end the end of the movement.

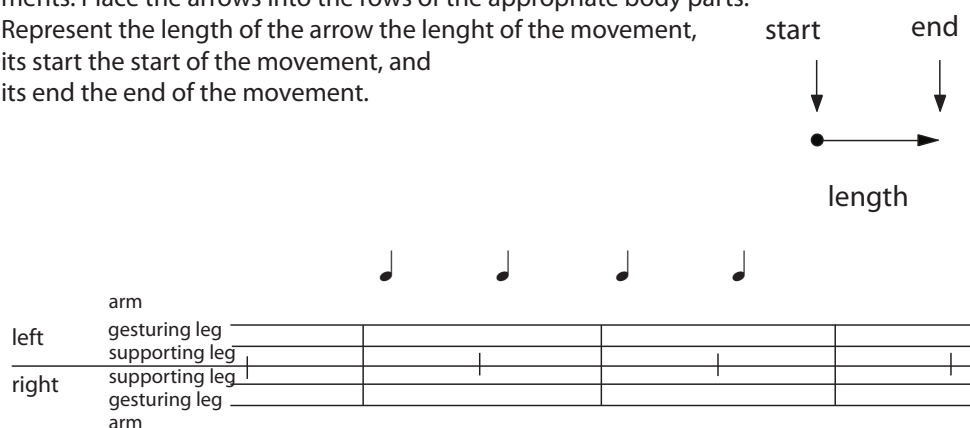


Fig. 13.

### Solutions and evaluation

The survey was made to discover the way of notation of the touching gestures, therefore those responses were selected primarily which included contacts. Floor contact was performed first in Task 5 (Fig. 5). Fig. 14.a-j introduces a selection of responses to Task 5 given by students with longer dance training (12-22 years), representing amateur and professional dancers at both BA and MA level. (At the end of the paper the sex, length of dance practice and level of education of the selected respondents are listed.)

To visualize analysis, in Fig. 14 short vertical arrows were placed to point to where participants indicated the *beginning* of the movements. Continuous arrows appear at supports, while dotted ones at gestures. Except Fig. 14g the solutions are quite uniform, the participants positioned the beginning of movements to the *beginning of beats*. Uniformity might make us ponder, that while supports factually (physically) started, gestures – no matter, contacting or not contacting ones – factually (physically) *arrived* at the beginning of the beats.

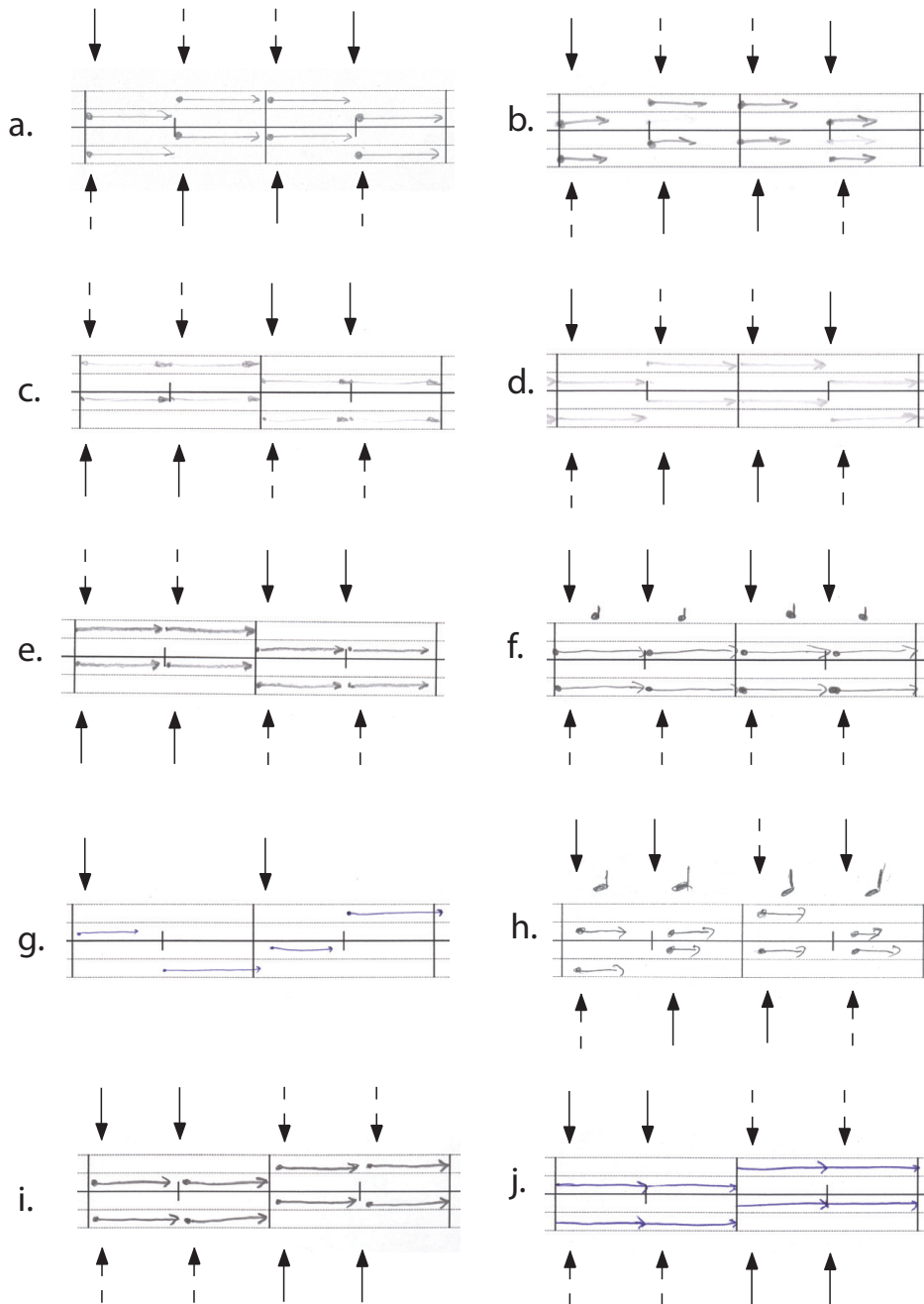


Fig. 14.

Three further characteristics of the responses can be observed. In Fig. 14b the start of the movements were fitted to the start of the beats, but the ends were finished earlier compared to the length of the beat. A similar solution can be seen in Fig. 14h with the difference, that the starts of the movement indications are shifted slightly beyond the starts of the beats. Note the appearance of the musical notes in Fig. 14f and Fig. 14h, despite requirement. The participants placed the ♩ note in the middle, not to the beginning of the beats. The solution of Fig. 14g is unique compared to the

other ones, because the ends of the leg gestures appear at the start of the beats, that is theoretically the factual performance of the movement was considered. Though it is embarrassing, that the gesture of the leg ends on that moment when almost immediately a support starts with the same leg. Since such a movement combination can't be performed, it can be assumed that this solution is a mistake.

The selection introduced above represents all but one types of the responses. A full overview of all the response types can be seen in Fig. 15. Five graphical solutions could be identified for indicating touching gestures. In „A” the students drew the arrows representing the movement rhythm from the start of a beat until its end, in „B” the arrows were started at the beginning of a beat but finished before its end, in „C” the arrows shorter than a beat were positioned approximately in the middle, in „D” the arrows with a length of a beat were drawn across the tick mark indicating a beat, while in „E” the rhythm lines expressed a start before, and an arrival on the beat.

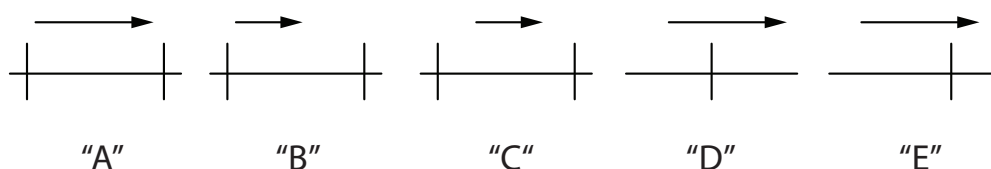


Fig. 15.

From the point of evaluation „A” and „B” seem quite similar since in both cases the movement indications started at the beginning of the beats. „C” can be regarded as their variant, even if the arrows appear rhythmically on a nonsense position. It can be supposed that „C” was intended to indicate roughly the requisition of the whole beat. „D” indicates a contra rhythm, two participants applied it in solving the complex Task 10 and 11, probably they misunderstood the rhythm. Solution „E” suggests starting the touching movement before, and arriving on the beat. Reflecting the physical performance, this response can be regarded the proper one.

The frequency of responses can be seen in the chart of Fig. 16. The chart includes all tasks which consisted gestures, because from the point of the temporal process in the task presented both contacting and non-contacting gestures arrived by the start of the beats. Columns indicate the types of responses, the rows the frequency of replies by tasks. Arm and leg movements were separated in showing the replies to Task 10 and 11. Numbers in the column of „Non-valuable” refer to lack of reply or nonsense rhythm (e.g. indication of 4 ♩ arm movement).

Task No.	„A”	„B”	„C”	„D”	„E”	Sum of valuable	Non-valuable
4.	46	0	3	0	0	49	3
5.	40	2	4	0	1	47	5
6.	39	2	6	0	1	47	5
7.	42	3	4	0	0	49	3
8.	40	0	3	0	0	43	9
9.	44	1	2	0	0	47	5
10. leg	38	1	4	2	0	45	7
10. arm	41	2	2	1	1	46	6
11. leg	35	1	3	1	1	41	11
11. arm	37	0	3	1	1	42	10
12.	38	1	6	0	0	45	7
<b>Total</b>	440	13	40	5	5	501	71

Fig. 16

If the number of replies in column „D” (contra rhythms) and in column „E” (correct replies re factual timing) are subtracted from the total Sum of valuable replies, 491 replies are resulted, which imply, that trained traditional dancers define movement rhythm by the time of arrival, that is regarded the start of beats the start of gestures, a moment by which contacting or non-contacting gestures were completed. The sum compared to the total of 501 valuable replies results an overwhelming 98% majority, which seem supporting the initial assumption. There is definite difference between the factual and the dancer’s inner representation of movement rhythm.

A clean-cut explanation has not been found yet. As a theoretical starting point it may worth mentioning an approach of the cognitive psychology introduced by its early representative, William James<sup>5</sup>. According to James (1890, 116) „In habitual action ... the only impulse which the centres of idea or perception need to send down, is the initial impulse; the command to start.” Afterwards – states James – movement proceeds without conscious awareness because response-produced feedback stimuli „have their seat below the ideational lines”. It can be assumed that this lack of „conscious awareness” can be the reason why the dancers did not realize

<sup>5</sup> James, William (1890). *The principles of psychology* (Vol 1). Holt, New York



their gestures starting before a beat, but the gestures' arrival, the result on the beat got conscious attention. Adopting the notion to support movements, gaining back (at least temporally) the equilibrium might serve a feedback on the movement to the dancer.

The placement and shape of arrows in reply types „A”, „B” and „C” disregarding the temporally factual movement process let us conclude, that participants trained in the traditional dance technique identify movements in an average tempo around  $\text{♩} = 120\text{-}130$  in rhythmical units by body equilibrium and not as temporal process. The notion of unit-like inner temporal representation seems to be supported also by the placement of the  $\text{♩}$  musical note to the center of beat in replies like Fig. 14f and Fig. 14g.

### Possible consequences from the point of notating touching gestures

Let's have a look at the „exact timing” notation of Task 5 in Fig. 17a and at the notation in Fig. 17c, where Task 5 is notated following the method of „rhythm expressive timing”, and compare them with Fig. 17b placed in between, a repetition of Fig. 14a, which is considered representing the majority of response types in the above survey. (For the sake of easier comparison, Fig. 14b is rotated into the vertical.) It can be observed, that the start of gestures in Fig. 17b matches the start of gestures in Fig. 17c. Here can be pointed out, that the reason of the frequent mistakes in notating touching gestures, which was observed during my about 25 years education experience, was not the lack of education level, but an automatic application of an inner rhythm representation.

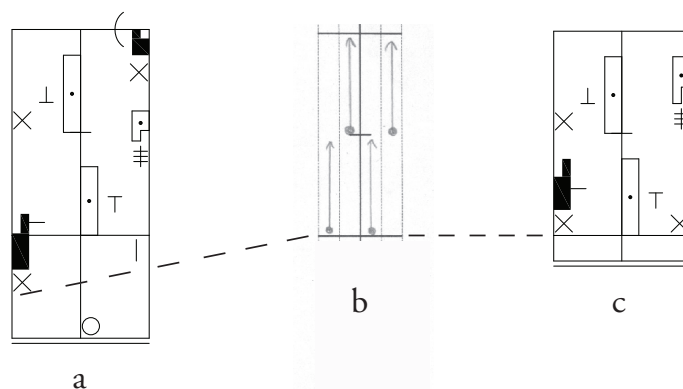


Fig. 17.

On the basis of this recognition the question can be raised, what the principles of notation should be adjusted to: reflecting the inner rhythm representation or the temporally factual performance? It is obvious, that reflecting the temporally factual performance results an exact and unambiguous notation, but its recognition and application gets to difficulties, it drops out of memory easily and can be kept only by a constant calling attention. An advantage of the “rhythm expressive timing” – as

the above survey seems to prove – the adjustment to the inner rhythm representation, which helps the recognition and application of notation. It can be assumed, that the spread of notation use and the development of movement cognitive thinking is supported, if the conversation between the outer knowledge (notation) and inner knowledge (movement ideas) is easier and simple.

It also can be assumed that a far larger sample of participants would result the same finding, therefore on the bases of movement imaginary automatism a further step can be made toward establishing a proposal for the „rhythm expressing timing” way of notation as an alternative method. As a notation theoretical construction beyond the notion of spatial directional destination<sup>6</sup> the idea of temporal destination might be raised, which can help identifying the concept of the „rhythm expressing timing”. It also has to be mentioned, that searching for theoretical backgrounds of rhythm indications in the system, no definition, only examples of the use of the already introduced „unit timing” could be found.

Running a little ahead in the matter, a cautious statement might be risked, that recognition of movement rhythm from notation of dance genres of or with an origin in European traditional dances is easier via using „rhythm expressing timing”, especially if the notation is meant for experts familiar with the performing styles. It must be admitted however, that the survey summarized shortly above is only a partial result, the research in the subject can't be regarded completed.

#### SOURCE OF MOTIFS

Fig. 1: *Dus* from Rábaköz

Fig. 2: *Ugrós* from Somogy

Fig. 3: *Féllóláhos* from Gyimes

Fig. 4: *Ugrós* from Somogy

Fig. 5: *Mars* from Kalocsa region

Fig. 6: *Mars* from Kalocsa region

Fig. 7: Rhythm exercise with claps

Fig. 8: Rhythm exercise with steps and claps

Fig. 9: Rhythm exercise with steps and claps

Fig. 10: *Silladri* from Bukovina

Fig. 11: *Silladri* from Bukovina

Fig. 12: Handkerchief dance from Mezőföld

#### DATA OF THE SELECTED RESPONDENTS

Fig. 14.a: amateur man, Fig. 14 years of dance training, BA. 2. year

Fig. 14.b: amateur man, 15 years of dance training, BA. 2. year

<sup>6</sup> As basic concepts of notation, the binary notions of „motion” – „directional destination” were introduced first in the second edition of Ann Hutchinson's *Labanotation* (Hutchinson 1970, 15).

Fig. 14.c: amateur man, 12 years of dance training, BA. 2. year  
 Fig. 14.d: amateur woman, 15 years of dance training, BA. 2. year  
 Fig. 14.e: amateur woman, 22 years of dance training, BA. 2. year  
 Fig. 14.f: amateur woman, 15 years of dance training, BA. 2. year  
 Fig. 14.g: amateur woman, 15 years of dance training, BA. 2. year  
 Fig. 14.h: professional man, 15 years of dance training, BA. 2. year  
 Fig. 14.i: professional man, 15 years of dance training, MA. 2. year  
 Fig. 14.h: professional woman, 15 years of dance training, MA. 2. year

## REFERENCES

- FARKAS, Zoltán (2008) *Néptánc alaptechnikák módszertana. Ugrós – Lakócsai táncok – Kalotaszegi csárdás*. [A methodology of traditional dance techniques. Ugrós – Dance from Lakócsa – Csárdás from Kalotaszeg] DVD video. Budapest: X-produkció.
- FÜGEDI, János (2007) “Unit timing of touching gestures.” *Proceedings of the Twenty-Fifth Biennial Conference of the International Council of Kinetography Laban*, held at Escuela Nacional de Danza Clásica y Contemporánea, Mexico City D.F., Mexico, July 29-August 5, 2007, 33-48.
- FÜGEDI, János – MISI, Gábor (2009): “Ways of notating floor touching gestures with the foot.” *Proceedings of the Twenty-Sixth Biennial Conference of the International Council of Kinetography Laban*, held at Suan Sunandha Rajabhat University, Bangkok, Thailand, August 3-8, 2009, 43-60.
- FÜGEDI, János (2011) *Tánc – Jel – Írás. A néptáncok lejegyzése Lábán-kinetográfiával. Szóló- és körformák*. [Dance – Sign – Notation. Notating Traditional Dances with Laban Kinetography. Solo and Circle Dances] Budapest: L'Harmattan - MTA Zenetudományi Intézet.
- Hutchinson, A. (1970): *Labanotation*. Second, revised edition. New York: A Theatre Arts Books.
- LÉVAL, Péter – FÜGEDI, János (eds.) (s.a.): *Néptáncaink tanítása – Ugrós táncaink*. [Teaching our traditional dances – Ugrós dances]. DVD video. Budapest: Planétás.
- JAMES, William (1890). *The principles of psychology*. Vol 1. New York: Holt.

## INTERNET REFERENCES

- Dance Notation Bureau (DNB) Theory Bulletin Board: <http://dnbtheorybb.blogspot.com/search/label/Minutes%20for%20Theory%20Meeting%20Thread>
- MAHONEY, Billie (2011): Comments from Billie Mahoney. <https://docs.google.com/viewer?a=v&pid=explorer&chrome=true&srcid=0B8Q3wiYtY7OCMWFhNDcyMDEtNzEzMC00ZDI4LWI0NjYtMmE0YTRiMzZjYjFm&hl=en&authkey=CJqipdMG>