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## Broadbent' s Cognitive Approach and Its Effect on Motor Performance in Sports

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### ABSTRACT

This study aimed to test Broadbent' s attentional filtering theory in the perceptual motor task of dart throwing. Dart board size was manipulated in order to reduce the amount of information to be filtered in the participants' field of view. Sample consisted of 122 college students (63 males and 59 females) ranging in age from 17 to 36. Participants' task was to throw 18 darts at the center of targets 45 cm, 30 cm and 15 cm in diameter. Performance was measured as radial distance from the bulls-eye of each dart. One way ANOVA, Repeated Measure of ANOVA was used in the analysis of the obtained data. The results of our study showed that dart throwing performance gave better results in cases where target' s field of view was reduced, compared to the ones in which target' s field of view was increased. Consistent with Broadbent' s central claim, results showed that fewer stimuli in the field of view required less processing, thus, better performance. Also, those subjects that were exercising regularly did better than the ones that were not exercising. This study provides evidence that reducing target' s field of view in dart throwing increases the chances to obtain better results.

### KEYWORDS

Attentional Filtering, Perception, Dart Throwing

### Cite this paper

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### References

- [1] Abernethy, B., Wann, J., & Parks, S. (1998). Training perceptual motor skills for sport. In B. Elliott (Ed.), *Training in sport: Applying sport science* (pp. 1-55). London: Wiley Publications.
- [2] Abernethy, B., Maxwell, J. P., Masters, R. S. W., Van Der Kamp, J., & Jackson, R. C. (2007). Methodological review and evaluation of research in expert performance in sport. In G. Tenenbaum and R. C. Eklund (Eds.), *Handbook of sport psychology* (pp. 161-184). Hoboken, NJ: John Wiley & Sons, Inc.
- [3] Anson, G., Elliott, D., & Davids, K. (2005). Information processing and constraints-based views of skill acquisition: Divergent or complementary? *Motor Control*, 9, 217-241.
- [4] Araki, K., & Huddleston, S. (2002). The effect of color on a target accuracy task. *International Sports Journal*, 6, 86-92.
- [5] Beek, P. J., Jacobs, D. M., Daffertshofer, A., & Huys, R. (2003). Expert performance in sport: Views from the joint perspectives of ecological psychology and dynamical systems theory. In J. L. Starkes and K. A. Ericsson (Eds.), *Expert performance in sports: Advances in research on sport expertise* (pp. 321-344). Champaign, IL: Human Kinetics.
- [6] Bernstein N. A. (1996). On dexterity and its development. In: M. L. Latash and M. T. Turvey (Eds.), *Dexterity and its development* (pp. 3-224). Hillsdale, NJ: Lawrence Erlbaum Associates.
- [7] Bindarwish, J., & Tenenbaum, G. (2006). Metamotivational and contextual effects on performance,

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self-efficacy, and shifts in affective states. *Psychology of Sport and Exercise*, 7, 41-56. doi:10.1016/j.psychsport.2005.04.001

- [8] Broadbent, D. E. (1958, 1998). *Perception and communication*. London: Pergamon Press.
- [9] Cowan, N. (1998). *Attention and memory: An integrated framework*. Cary, NC: Oxford University Press.
- [10] Desimone, R., Duncan, J. (1995). Neural mechanisms of selective visual attention. *Annual Review of Neuroscience*, 18, 193-222. doi:10.1146/annurev.ne.18.030195.001205
- [11] Duffy, L. J., Baluch, B., & Ericsson, K. A. (2004). Dart performance as a function of facets of practice amongst professional and amateur men and women players. *International Journal of Sport Psychology*, 35, 232-245.
- [12] Duffy, L. J., Ericsson, K. A., & Baluch, B. (2007). In search of the loci for sex differences in throwing: The effects of physical size and differential recruitment rates on high levels of dart performance. *Research Quarterly for Exercise and Sport*, 78, 71-78.
- [13] Eason, B. L., & Smith, T. L. (1980). Effects of multi-chromatic and achromatic targets and darts on throwing. *Perceptual and Motor Skills*, 51, 519-522.
- [14] Edwards, B., Waterhouse, J., Atkinson, G., & Reilly, T. (2007). Effects of time of day and distance upon accuracy and consistency of throwing darts. *Journal of Sports Sciences*, 25, 1531-1538. doi:10.1080/02640410701244975
- [15] Emanuel, M., Jarus, T., & Bart, O. (2008). Effect of focus of attention and age on motor acquisition, retention and transfer: A randomized trial. *American Physical Therapy Association*, 88, 251-260.
- [16] Gouchie, C., & Kimura, D. (1991). The relationship between testosterone levels and cognitive ability patterns. *Psychoneuroendocrinology*, 16, 323-334. doi:10.1016/0306-4530(91)90018-O
- [17] Hodges, N. J., Huys, R., & Starkes, J. L. (2007). Methodological review and evaluation of research in expert performance in sport. In G. Tenenbaum and R. C. Eklund (Eds.), *Handbook of sport psychology* (pp. 161-184). Hoboken, NJ: John Wiley & Sons, Inc.
- [18] Lachter, J., Forster, K. I., & Ruthruff, E. (2004). Forty-five years after Broadbent (1958): Still no identification without attention. *Psychological Review*, 111, 880-913. doi:10.1037/0033-295X.111.4.880
- [19] Luck, S. J., & Hillyard, S. A. (1994). Spatial filtering during visual search: evidence from human electrophysiology. *Journal of Experimental Psychology: Human Perception and Performance*, 20, 1000-1014. doi:10.1037/0096-1523.20.5.1000
- [20] Miller, J. (1991). The flanker compatibility effect as a function of visual angle, attentional focus, visual