

Second Edition

Student's guide to Animal Stereotypies



Bryan Schønecker

Bryan Schønecker

**Student's guide to
Animal Stereotypes**

Second Edition

Frydenskrig Forlag

Student's guide to Animal Stereotypes, Second Edition

Copyright © Bryan Schønecker 2014

All rights reserved

Published by Frydenskrig Forlag, Denmark

Cover and photos by Bryan Schønecker

Font: Georgia

ISBN-13: 978-87-997324-8-7 (EPUB)

ISBN-13: 978-87-997324-9-4 (PDF)

First Edition by Saxo Publish, Denmark, 2013

Other books by the author:

Student's guide to Diabetes. 2013

Student's guide to Epilepsy. 2013

Student's guide to Animal Models. 2013

The Bank Vole as Experimental Animal. 2013

Contents.

Preface		1
Chapter 1	Basics of animal stereotypes	2
1.1	Attempts to define and classify stereotypes	2
1.2	Description of stereotypes	4
1.3	Why study stereotypes?	5
1.4	Triggering factors behind stereotypes	6
1.5	Prevalence of animal stereotypes.	6
1.6	A small selection of causal hypotheses	7
Chapter 2	Animal “welfare“	8
2.1	Attempts to measure “welfare”	8
2.2	Effect of stereotypes on “welfare”.	9
Chapter 3	Summing up on stereotypical behaviours	11
References		12

Preface.

One of the main subjects of my recent PhD dissertation touched upon stereotypical behaviours in Danish bank voles, so I needed to present a brief introduction to this subject. What you are about to read now is a slightly modified version of the final product, as presented in my dissertation [1], and this second edition of *Student's guide to Animal Stereotypies* only adds minor revisions to the first edition.

I was originally under the impression that researchers generally considered animal stereotypies to be the result of complex cognitive processes, influenced by all kinds of motivations, and most certainly also good signs of poor welfare. Well, in reality there are many opinions in this matter, and since there are also not that many active researchers within this field, the ratio of reviews to research papers has not changed much the past 15 years. I believe it to be still around 1: 3-4.

Animal stereotypies are a mystery on so many levels and the main problem is the immense complexity of the brain and subsequent mental development. There are still many unexplored facets and although researchers have indeed produced several seemingly robust results, a major question will still be why only some animals of a particular species or strain develop stereotypies and why not all of them (or none). Many previous researchers have presumably noted this individual variation in behaviour, but papers targeting an association between certain “personality-types” and proneness to develop stereotypies are few and relatively recent. But then again, even if (or rather “when”) robust results from this line of research start to also emerge they will of course just trigger new questions such as what factors determine a given “personality”?

The present knowledge of stereotypies can, in my opinion, be figuratively presented as scattered spots of results and observations on the surface of a big inflated balloon. The really interesting causalities, mechanisms and effects are still buried deep within the poorly unexplored interior, so many pioneering experiments await those who prefer to do, rather than to review.

Bryan Schønecker.

Hareskovby, Denmark, April 2014.

Chapter 1 - Basics of animal stereotypes.

The usual jargon for stereotypical behaviour is *stereotypic* or *stereotyped* behaviour(s), and the term *stereotypic* and *stereotyper* is often used to designate individuals which has been observed performing an act of *stereotypy* or bouts of *stereotypies*. Stereotypies can also be seen among humans suffering from various mental disorders, substance abuse (or plain youth), but these chapters mainly address stereotypies in animals.

1.1 - Attempts to define and classify stereotypies.

Stereotypies resemble life and the human greeting ceremony in the sense that such phenomena are notorious hard to define unambiguously without making a definition so broad and trivial that it becomes almost useless in practice.

Elements of stereotypies were recognised already from the early 20th century [2], and Ödberg [3] synthesized the following definition of animal stereotypies which so far have endured for more than three decades:

- Stereotypies are behaviours characterised by 1) “*morphologically identic*” movements, which 2) are “*repeated regularly*”, and 3) “must have “*no obvious function*”, must be “*apparently useless*”, must “*seem purposeless*” or “*aberrant*””. After some consideration, Ödberg suggested that “*the term “unusual” is perhaps better than “useless” or “purposeless”*” as the defining third characteristic [3].

Ödberg’s definition from 1978 has been criticised for not recognizing some degree of intra-individual variation in these stereotypies [4], and a later variant from 1983 - “*Stereotypies are repetitive actions which are fixed in form and orientation and serve no obvious function*” - was criticised because “*it mixes up objective (the repetition of an invariant sequence of behaviour) and subjective judgements (the purposeless nature of the behaviour)*”, and because of its “*simplistic nature*” [5].

Ödberg later modified the definition to “*the following three characteristics: relatively invariant pattern, regular repetition, apparent uselessness*” [6], with due reference to his earlier work [3, 7].

In short, researchers have yet to agree on a basic definition of animal stereotypies (see e.g. [3, 5, 8-12]), and to my knowledge, the latest attempt is made by Mason, who in 2006 proposed to acknowledge the implicit “*garbage*” usually attached to the concept of stereotypies in animals (i.e. basically the interpretation that stereotypies are like “scars” [13]; the overt signs of past/present sufferings - see e.g. [3, 14, 15]) in a new definition of stereotypic behaviour as:

- a “*repetitive behaviour induced by frustration, repeated attempts to cope, and/or CNS dysfunction*” [16].

What Mason’s proposal basically imply is a reduction of Ödberg’s three describing features of stereotypies, poorly defined as they were right from the start, to now just the one, and a further restriction of these heterogenic behaviours to those supposedly caused by three, equally undefined, causes.

Further subdivisions are also proposed (“*frustration-induced*” and “*malfunction-induced*” stereotypies, the latter with four subdivisions according to the more specific supposed type of CNS disorder). Behaviours without known causal factors, formerly defined as stereotypies, should now be defined as “*abnormal repetitive behaviours*”. See Latham & Mason [17] for a further elaboration on the implications in Mason’s proposal.

A proper definition of human stereotypies has also been discussed for long, and the latest attempt to define a human stereotypy, as far as I am aware, is made by Edwards et al. in 2012:

- “*a stereotypy is a non–goal-directed movement pattern that is repeated continuously for a period of time in the same form and on multiple occasions, and which is typically distractible*” [18].

Edwards et al. also provide an overview of human stereotypies in case you should be interested in this particular field.

1.2 - Description of stereotypes.

Despite the obvious problems in defining stereotypes they remain easily recognizable for observant laymen as misplaced behaviours of sorts, apparently irrelevant for the context in which they occur. Stereotypes appear devoid of...

End of free sample.