

MUTUAL VISUAL RELATIONSHIPS OF RABBITS RAISED IN INDIVIDUAL CAGES

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ABSTRACT

To test if rabbits located in cage rows, as in the industrial units, can manifest a kind of social relationship by looking at each other, a specific experimental set was prepared. This was formed by three contiguous cages in which three 17 weeks-old does were introduced. The behaviour of the does was video-recorded for 24 hours and a photogram was taken every 12 minutes (120 per day) for 14 consecutive days. The trial had three replications and a total of 9 does was checked. The three cages offered a different situation. The work hypothesis was that, if looking at another subject is a way of showing social interest, the does in the lateral cages should orient their head significantly more frequently towards the central cage than in the opposite direction. If the doe in the central cage looked more often at one of the two does located on either side, this should be interpreted as a social preference. Though the does manifested a clear individual behaviour, the tendency to look towards the subject nearby was highly significant ($P < 0.001$). On the contrary the differences were not significant when the doe was located in the central cage and had a conspecific animal on both sides of its cage. It is then concluded that rabbits show a tendency to look at each other also when located in different cages. In this way they can establish a kind of visual social relationship when cages are contiguous. Apparently it is sufficient to have at least another rabbit to look at. Thus the disposition of the animals in cage rows, as in the industrial systems, must be considered fit to allow the manifestation of this type of social behaviour.

Key words: Welfare, Rabbit, Social behaviour.

INTRODUCTION

As the rabbit is considered a social animal new managerial technologies have been introduced, such as the presence of several does in the same cage (Ruis, 2002; Hoy and Schuh, 2004) or increased cage dimensions to host larger groups of fattening subjects (Rommers and Meijerhof, 1998; Dal Bosco *et al.*, 2004; Maertens *et al.*, 2004). Nevertheless, social behaviour has been studied mainly in experimental conditions rather than in industrial systems, where the importance of maintaining social contacts among rabbits raised in individual cages has been underlined (Verga, 2000; Xiccato and Trocino, 2005; Jordan *et al.*, 2007). Visual contacts are specifically recommended by Boers *et al.*, 2007, but, as it is difficult to interpret complex ethograms when many traits are simultaneously considered (Negretti *et al.*, 2004), only mutual visual interrelationships between rabbits kept in contiguous cages have been specifically studied in this paper.

MATERIALS AND METHODS

Animals and experimental design

A set of three standard cages was utilised, each of them hosting a four month old rabbit doe. The animal behaviour was recorded by a computerised web-camera (Hoy, 2002; Jordan *et al.*, 2007) which

selected a photogram each 12 minutes (120 per day) for 14 consecutive days. The trial had three replications and a total of 9 does was checked.

The three cages offered a different situation. The work hypothesis was that, if looking at another subject is a way of showing social interest (Lopez, 2002), the does in the lateral cages should orient their heads significantly more frequently towards the central cage than towards the opposite direction. Except for the times when the animals were directing their interest to other directions, for instance towards the side where feeders were located, the expected percentages of looking in one of the two directions are 50/50 if no preference is manifested. The doe in the central cage could also orient the head in one of the two directions considered, but, if it looked more frequently to one of the two, this could be interpreted as a social preference since, in this case, there is a rabbit on both sides. Figure 1 shows the experimental setup.

According to the working hypothesis, the doe on the right is showing no social interest while the does on the left and in the central cage show a mutual social interest by looking at each other.



Figure 1: In the experimental set the two does on the left show a reciprocal interest

The animals were housed in a special room where presence of persons was minimized and artificial illumination was 14L/10D, according to the seasonal conditions present in the open air unit where the animals came from. In order not to change the natural conditions the night light was simulated by a 25W bulb that delivered the same intensity measured by an exposure metre regulated to record a full moon nocturnal light. All the other housing conditions were standard.

The significance of differences was tested by the chi square test (SAS, 1998).

RESULTS AND DISCUSSION

Figure 2 shows the behaviour of the first tested does housed in a lateral cage. The animals showed a clear preference to look at the rabbit in the cage nearby, but the magnitude of this behavioural response changed sensibly according to time and subject. A similar result was observed in the other three subjects. The tendency to look at the subject nearby was highly significant ($P < 0.001$) and can be interpreted as a way by which rabbits housed in single cages manifest a social behaviour.

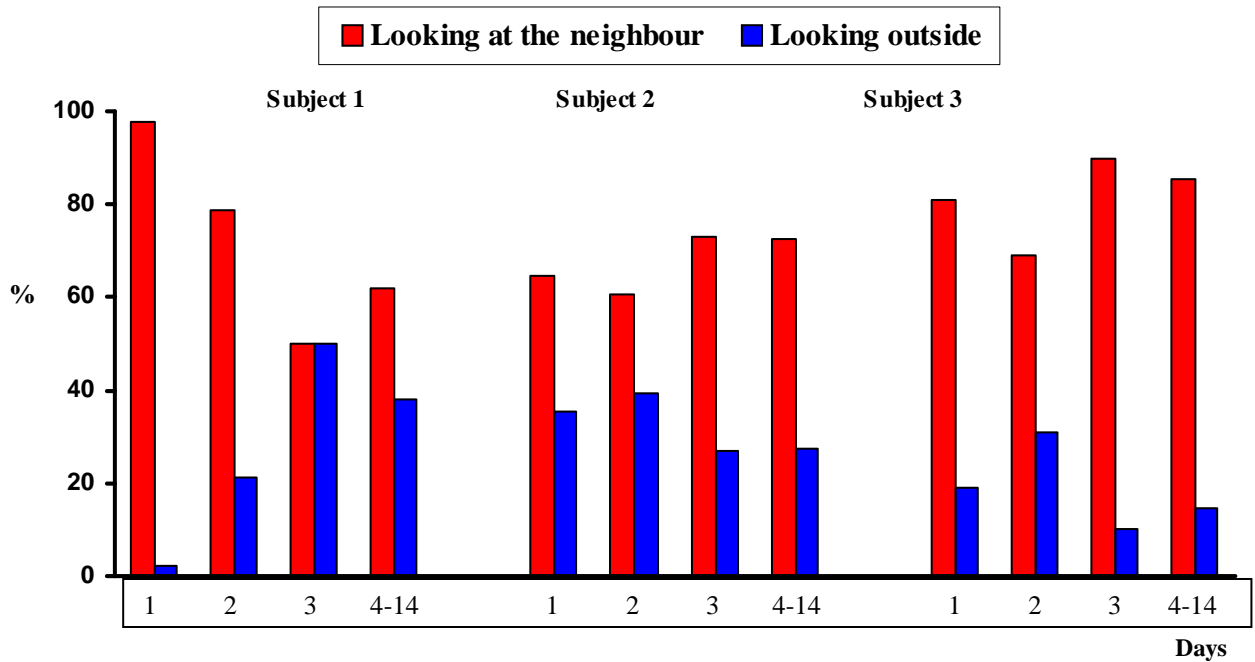


Figure 2: The does prefer to look towards the cage where another doe is housed

As expected, when the does were housed in the central cage they looked at the subjects located on either side not showing any significant difference in the preference for any one (Figure 3).

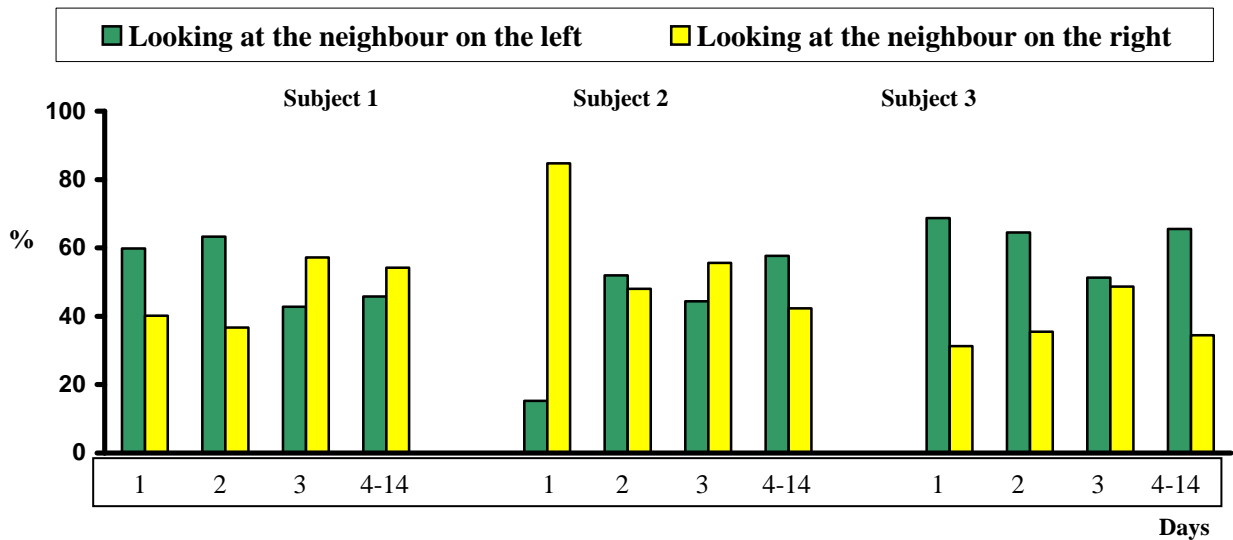


Figure 3: The does housed in the central cage do not show any specific preference after the first days.

CONCLUSIONS

Rabbits show a tendency to look at each other when located in individual cages. In this way they can establish a kind of visual social relationship when the cages are contiguous. Apparently, it is sufficient to have at least another rabbit to look at. Thus, the disposition of the animals in cage rows, as in the industrial systems, must be considered fit to allow the manifestation of this type of social behaviour.

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