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Antimicrobial prescription behaviour among veterinary practitioners in the Netherlands; a cultural theory on attitudes and trade-off decision making

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Introduction

To understand key factors that explain differences and communalities in antimicrobial prescription behaviour of veterinarians, behaviour itself must be understood beyond individual rational decision making.

Cultural theory

Cultural theory, contrary to rational choice theory and behavioural economic studies, acknowlegdes that cultural structures play a role in individual trade-off decisions. Individual connectivity to cultural structures via learnt attitudes is complex and dynamic. The attitudes can be queried as personal beliefs, but as a consequence the trade-off decisions that are based on these attitudes are viewed at a personal level and generally as solely technical or professional. They are thereby errorously depoliticised.

Attitudes

The veterinary professional attitudes towards antimicrobial use, resistance and reduction are part of a dynamic construct of professional, personal and cultural attitudes, which have been (socially) learnt and internalised throughout the practitioner's life.

The professional's openess to social alignment in the personal, professional and societal sphere influences the (re)shaping of professional attitudes.

Trade-off decision making

Veterinary antimicrobial prescription behaviour is influenced by trade-off decision making. Trade-offs are value decisions, which derive from a hierarchy of attitudes. The hierarchy of attitudes determines how much value is allocated in trade-off decisions.

Study methodology

A qualitative study was undertaken. Based on an adapted behavioural research model (Theoretical Domains Framework; TDF), eleven semi-structured interviews were held with farm animal veterinarians. They were selected through the snowball technique and diversity criteria.

The interviews were recorded and transcribed verbatim and subsequently analyzed using Nvivo 11 Pro software (QSR®).

The results from three TFD domains: **Professional Role; Attitudes and Emotions** were linked and compared to a literature review.

Results

Professional role

The practitioners in the study see their professional role as **serving in a web of interests**, which they grouped to four major interest entities: animals; farmers; practice; and public authorities (Fig. 1).

The clusters of the public and market domain (in)directly weigh in on the trade-off decisions.

By professional attitude, value is allocated to the interests of the four interest entities for a trade-off in an antibiotic prescription decision.

Attitudes

The interviewed practitioners shared the conviction of the 'Veterinarian Factor'. Two practitioners in a same situation may do a different trade-off, whereby one may prescribe an antimicrobial and the other may not. This is indicative of **a difference or variation in professional attitude**.

Emotions

The most frequently shared emotion in the interviews was frustration.. Frustration is a power related emotion, revealing that an interest or an attitude is under stress.

Most frustrations originated from the feeling of having too little **professional autonomy** to properly and ethically practice their profession. These interviewees felt caught up between commercial pressures ánd legislation and policy demands, where as the others did not. The former experienced conflict between witholding an antimicrobial and animal well-being or expected disease consequences.

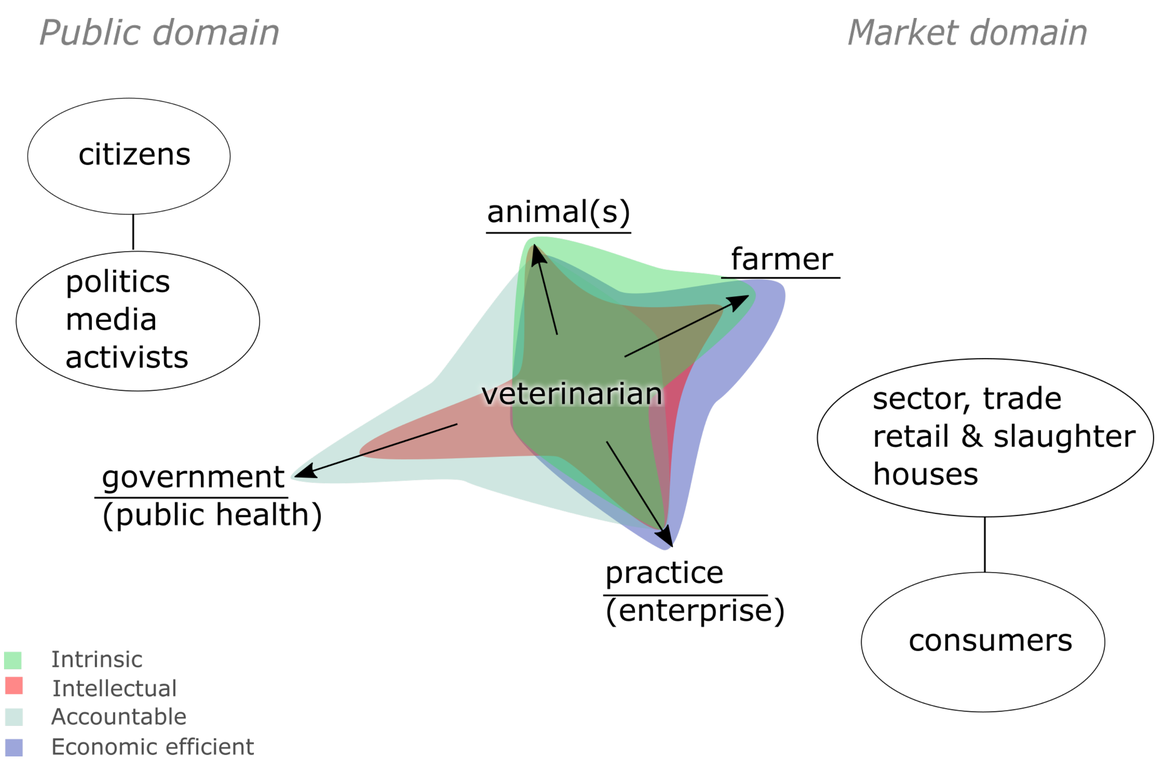

Figure 1. Veterinary practitioner serves in a web of interests

Theory: Professional core attitudes

The difference in desire for professional autonomy (independent antibiotic trade-off decision making) can be explained by a difference in the prevailing of professional core attitudes that underpin the trade-off decision making.

The core attitudes are constituted from work values, which provide job satisfaction. **All four core attitudes** (shown in Table 1) can be present in the individual veterinarian, although seldom equally strong.

The emerging dominant attitude causes a **decision making bias** (inclination) (Fig.1). In society and the sector, economic efficiency attitudes have gained importance. For veterinarians working in large scale intensive systems, an inclination towards economic efficiency may be more likely.

Table1: Four professional core attitudes

Attitude 1	**'intrinsic to the work'**	Keeping animals healthy is a joy
Attitude 2	**'intellectually challenging'**	Keeping animals healthy is complex, needs competence
Attitude 3	**'accountable to society'**	Keeping animals healthy is my responsibility to society
Attitude 4	**'economic efficiency'**	Keeping animals healthy must be cost effective

Conclusions

1 Policy Policy influences professional values and attitutes and has done so historically. If economic, public health, education and animal welfare policies contradict, they play out at the farm level. To further reduce veterinary antimicrobial prescription, economic and public health policies should be in alignment at the macro-level.

2 Complex systems In large scale complex systems, such has become the Dutch livestock sector, responsibilities and the necessary power to decide and act are in many cases no longer with the individual. Individual accountability needs reviewing in terms of true individual responsibility and various common responsibilities.

3 Validity The validity of a theory comes with testing the insights, that it provides. Scientific testing may entail Cultural anthropological study, Qualitative studies with Focus Group Interviews, Attitude research and Systems research.

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Acknowledgements:

The interviewed veterinarians, who openly shared their knowlegde, insights en feelings;

This study was funded by the Dutch Ministry of Agriculture, Nature and Food Quality (LNV).