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Honour, Loyalties and Triads in Early Modern Sciences

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In the minutes of the council (the self-administration organ) of the Royal Society of London for the 29th of march 1710, we read about a dispute between Hans Sloane, physician and secretary of the Royal Society, and John Woodward, also physician and member of the council of the Royal Society. Both had had an argument in a late meeting of the Royal society; now, the council had to decide how to resolve the conflict between the two members:

> "The Words spoken of Dr Sloane by Dr Woodward were: Speak Sense or English and we shall understand you. If you understood Anatomy you would know better: or to that purpose.
> And Dr Sloane and Dr Woodward being withdrawn, The Question was put, Whether these Words are Reflecting or not. It was carried in the Affirmative.
> Mr Clavell affirmed that Dr Sloane made Grimaces, with a Laughter, and holding up his hands at Dr Woodward, before the reflecting Words above-mentioned were spoken.
> The Question was put, Whether Dr Sloane by the said Gestures gave a sufficient provocation for the above-mentioned Reflections. It was carried in the Negative. The Question was put, Whether the said reflecting Words tended to the Detriment of the Royal Society. It was carried to the Affirmative."

Two months later, the dispute had been put again before the council and measures were taken to terminate the conflict:

> "Dr Sloane declared that he meant no Affront to Dr Woodward by any Gestures he made at a late Meeting of the Society.
> These following Questions were proposed, and the Votes taken by Ballott:
> Whether it be the opinion of the Councill, that Dr Slone's having declared that he did not intend by any Grimaces to affront Dr Woodward, be sufficient Satisfaction.
> Carried in the Affirmative that it is sufficient Satisfaction.
> Whether it be the opinion of the Councill, that Dr Woodward declare that he is sorry that he misunderstood Dr Sloane, and beg his pardon for the reflecting Words he spoke.

> Carried in the Affirmative that Dr Woodward do declare it.
> Dr Woodward refusing to make the said declaration and to beg Dr Sloane's pardon, the following Question was put:
> Whether Dr Woodward for creating disturbance by the said reflecting words after a former Admonition upon the Statute of Ejection, and for restoring the peace of the Society be removed from the Council.
> Carried in the Affirmative that he be removed."[1]

Grimaces, gestures, laughter, reflecting words, attempts to reconcile, giving satisfaction – scholars were acting in a passionate manner in a quarrel that had originated in a scientific disagreement. The scientific question, whether gall-stones are the cause of cholics, could not be decided in a scientific way. So, with emotions and passions, with ritual acts of violation and rehabilitation of honour, the scientific problem was not resolved, but in practice arbitrated in a court-like session; in that way it could be managed by the Royal Society[2]. The Society did not state that Sloane had been right in his scientific argument; but in transferring the dispute on the level of a conflict of honour, it was at least possible to put an end to the many scientifically unsolvable problems endangering scholarly cooperation.

But the dispute between Woodward and Sloane is not just about honour and science, it is a complex quarrel about power and influence in the Royal Society. Sloane had been secretary for over 10 years and in the same time editor of the Philosophical Transactions, the journal of the Society, and in this function he was best placed to promote friends as well as his and their scientific interests. Woodward and others were unsatisfied with the content of the Transactions and the meetings; they saw the work of the secretary as an injury of the Royal Society. They tried to get rid of Sloane, but Sloane as well had friends and the two groups faced each other. In this context, the quarrel between Sloane and Woodward seems to be part of a general group-struggle within the Royal Society about power and influence. The dispute between the two exponents of the groups can then be regarded just a well planned escalation in order to force a decision in the group-conflict. And indeed, the council acted in that way: Not the insulting grimaces and gestures of Sloane were punished, but the reflecting words of Woodward as a detriment of the Society. Woodward was removed from the council, Sloane stayed as the secretary – the party-conflict was decided in favour of Sloane.

But not just power was at stake in this conflict, but essential questions of scientific positions: What is natural science, what are the phenomena it has to deal with? What is a scientific

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[1] Royal Society, Council minutes II, 165-170.

[2] I'm following here a non-essential concept of honour, understanding conflicts of honour as modes of communication. See Martin Dinges: *Der Maurermeister und der Finanzrichter. Ehre, Geld und soziale Kontrolle im Paris des 18. Jahrhunderts*, Göttingen 1994. Klaus Schreiner/Gerd Schwerhoff (Hg.): *Verletzte Ehre. Ehrkonflikte in Gesellschaften des Mittelalters und der Frühen Neuzeit*, Köln/Weimar/Wien 1995.

argument, how should a proof look like? Were the two groups shaped along the lines of basic scientific positions? One could think of the often evoked scientific cultures, one tending towards curiosity (represented by the collector and future founder of the British Museum, Hans Sloane), the other, more empirical, towards usefulness (represented by Woodward who just owned a pure scientific collection of stones and rejected just curious samples from it).
The following reasoning aims at a different interpretation of scientific groups in the early modern period. I will argue that the groups were formed and acted as loyalty-groups, as groups of friends. Not fulfilling the duties of friendship and loyalty leads towards hostility and conflicts of honour. In this sense, the many conflicts of honour between scholars can be seen as a multivalent system regulating claims; they are part of an ongoing process that negotiated social and scientific standing.

The struggle between Woodward and Sloane could be traced back to the 1690's. Woodward had written a book[3] about the formation of the earth; and now it was he who had to defend himself against charges that he did not work in a scientific manner. For several years, furious treatises and letters were written from each side of the dispute. The interesting point is that all participants in this dispute were members of the informal, so-called "botanical club". Once a week the "botanical friends" were meeting around Sloane in a coffee-house, exchanging scientific objects and information. The club promoted the careers of its members, and so we find Woodward in the beginning of his carrier. He successfully applied for a professorship in Gresham College with the recommendation of his botanical friends, among them Sloane. What is the cause that these friends are so vehemently set up against the book of Woodward? One Dr. Martin Lister, also member of the club and the Royal Society, could just stopped by a friend from attacking Woodward with the sword in Westminster.
That a scientific book, treating with fossils, the deluge, springs and vegetation could cause a duel in the crowded Westminster-area between two renowned scholars may be seen as a sign, how deeply the book's content offended Lister in his honour. He stated that fossils are formations of the playing Nature, accidental products like salt-formations. Woodward, on the contrary, saw fossils as the remnants of once-living animals and vegetables. He did not criticize Lister; he just wrote down his dissenting argument and did not even mention the name of Lister or other scholars. But to have a different opinion from a "friend" is to criticise, to behave disloyal, to revoke the friendship – and that would be seen as an affront. Criticism between "friends" was very limited; friendship was a social institution to protect and defend against critics.
Friends should be loyal, and that means to compliment the works of friends in every opportunity. Woodward – in not having mentioned the names of his friends, who helped him with information and objects, who wrote about the same subject – had violated the rules of

[3] John Woodward: *Essay upon the History of the Earth*, London 1695

friendship and loyalty. He had thus not just lacked good manners (a behaviour which could not effect a duel), but had raised his reputation in lowering the reputation of his former friends. Being at risk to accept his dealings, his former friends were forced to react, in order to regain their scientific and social reputation.
The groups were formed according to these loyalties – some of the botanical club joined Woodward, others Lister and Sloane, even if they shared the same opinion as Woodward. In the name of friendship they had to adapt to the argument of their friends and were to look out for proofs against Woodward's position. Thus, scientific conformity is engendered by loyalties and friendships. A friend had to praise the work of his friend and to blame the enemy of his friend, quite independently from the question at stake.
In the following years, through the 1690's until the 1720's, the loyalties and friendships are continually tested and renewed in different occasions: be it the question of fossils and the origin of the earth in the 1690's, be it the interpretation of an assumed roman shield from 1706 on, be it the power-question in the Royal Society 1710, or be it the cause of and remedies against small-pox in 1718: During these years it were on both sides the same persons involved in defending, respectively attacking Woodward. Newcomers acting in these contexts were ranged along these lines of friends and enemies. Isaac Newton, the president of the Royal Society, is called "my particular friend" by Woodward – he accepted the earth-theory. After the events in 1710, the removal of Woodward from the council with the consent of Newton, he is described as "a very ill and impudent president of ye Royal Society". Friendship and hostility, loyalty and conflict of honour, praise and blame are two corresponding sides of one medal.

These rules of friendship, loyalty and honour create a scholarly hierarchy: Woodward and Sloane both were successful in obliging loyal friends to their cause. At the same time, these rules were specific for scholars and marked the social limit of their community. The botanist John Ray followed the rules of friendship in his book about the origin of the earth and acknowledged to have had the information of a stone from his friend Edward Lhwyd. Promptly another scholar, William Cole, complained that he had first discovered the stone and that Ray had lacked to acknowledge his merit. It is thus an example of the many conflicts of honour between scholars about priority, by which their reputation was created. (One might think of the year-long debate between Newton and Leibniz about who has first discovered the calculus and who the plagiarist was.) The interesting point is that William Cole, the affronted claimant, gives an account of how he came to "discover" the stone: He had bought him from miners, who were obviously familiar with the scientific value of the stone. None of the scholars discussed even the possibility that the miners might have been affronted in not naming them as the first discoverers. In buying the stone, the transaction was completed and it was not necessary to remember the donor. The same was the case when two members of the botanical club hired a worker and trained him to collect geological samples for them. The

employment is terminated by the worker who sells his information and objects to other virtuosi. With that practice he is in no way a scholar with whom one could get into a conflict of honour about violating the rules of friendship and loyalty; he is just an untrue employee who opened up a new market.

Assistants as well as women were admired if they were skilful and learned; but they could not claim to be acknowledged as scholars and discoverers (but male assistants could advance through "apprenticeship" to a scholarly reputation). Mostly working in households of scholars, their work was published under the name of their master or husband.[4] In 1702, Maria Kirch discovered in Berlin a comet and wrote down her observations; but the account of this discovery in the Acta Eruditorum and the Miscellanies of the Berlin Academy of Sciences is given under the name of her husband, the astronomer Gottfried Kirch. She participated in the reputation of the household, and, needless to say, she was loyal and had no choice to be it.

In shortly summing up these examples I would like outline three different, but entangled economies at work in the early modern sciences: 1) Friendship as a manner of exchanging information and objects for free, but depending on and restricted by the practices of honour and loyalties. 2) Purchase as an exchange of objects or information for money, freed from the costly social investments in loyal friends, but without the confidence to get any further objects. 3) The household as a possibility of participation in science for women and persons of humble social standing, but bound to the household by a nearly unbreakable code of loyalty. Science depended on all of these economies, but the economy of friendship alone provided a long-term social space of confidence which rewarded the participants with personal reputation. Conflicts of honour about priority or the truth of a scientific proposition could arise only in that sphere. And it was only here that objects became scientific objects and persons were regarded as scholars.

I'm interested here mainly in the first economy of friendship, the interchange between scholars. It is an economy that, following Marcel Mauss and Pierre Bourdieu, is often described as a reciprocal exchange of gifts. But can the social interaction of friends be analysed as an exchange of gifts between two instances?

[4] Shapin, Steven: The Invisible Technician; in: *American Scientist* 77 (1989), 554-563. Schiebinger, Londa: *The mind has no sex? Women in the Origins of Modern Science*, Cambridge/Mass. 1989.