Shaking hands in public. What elite co-appearances tell us about the politics behind the scenes.

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Abstract

Even though observers of authoritarian regimes and elites have long relied on interpreting public appearances to understand the politics of such opaque governments, there is very little theoretical or systematic empirical research on that topic. The existing literature on public relations in authoritarian regimes views the regime largely as a unitary entity engaged in a battle with the opposition via censorship and propaganda. In the tradition of the new research of authoritarian regimes, this paper instead focuses on the actions of individual political elites within the regime by examining their co-appearance in public. Using social network analysis on a dataset of 19'000 appearances of 300 top Chinese officials from 2003 until 2014, I show that while public co-appearances are indeed determined by structural factors such as an elite's official position and their policy portfolio, it also reflects factional affiliation. The latter's effect is especially noticeable during less stable times, such as leadership transitions and during the recent anti-corruption campaign.

1 Introduction

On December 28, 2013, Chinese president Xi Jinping walked into local eatery "Qing Feng" in Beijing, stood in line to order pork-and-onion-stuffed buns, green vegetables, and stir-fried pig liver and intestine, paid and sat down to chat with the other clients and eat his meal. Soon thereafter, the Chinese blogosphere was alight with shaky cellphone pictures, and citizen reports were picked up and published by the official Chinese News Agency Xinhua. The visit went "viral" to a point that the Chinese censors apparently got nervous and put the word "stuffed bun" on the list of words automatically censored by the Great Firewall. It would have been the dream event of anyone in charge of Xi Jinping's election campaign.

Would have - if the Chinese president was elected by the masses he graced with his visit on that Saturday afternoon. But in China, public elections to select leaders occur only on the village-level. Which makes Xi's appearance puzzling: why organize a perfect electoral-democracy public relations stunt for a non-elected leader in an authoritarian regime? Or asking more broadly: Why do politicians and high-level administrators appear in public? Given how busy those people are, why is it deemed necessary that they should, for instance, spend considerable time reading speeches written by their ghostwriters, cut ribbons in groundbreaking ceremonies, or shake hands with foreign dignitaries?

Most observers seem to interpret Xi's appearance simply as an expression of a new public relations model of the Chinese Communist Party, an attempt of making the party appear to be closer to the "common people". There is little doubt that this is an important part of the story. This explanation also fits well with a scholarly tradition that views a (non-democratic) regime's public relation activities or announcements largely as an expression of a centralized, unified agency, the government and its bureaucracy - or its agent, the propaganda department (Brady, 2009; Wedeen, 1999). In that regard, the study of their public relations seems to lag behind the general field of research on authoritarian regimes, which has long ago abandoned the notion of a unitary, all-controlling agency popular in the study of totalitarianism and moved on to explore the actions and interests of different actors and institutions within a regime.

In this paper, I provide some evidence that public appearances of unelected officials

are not just determined by a central authority attempting to shore up general public support, or purely the result of well-established bureaucratic routine. This is probably true for democracies as well, but I will focus on the greater puzzle of public appearances in authoritarian regimes, which cannot be explained by the desire to win election campaigns, and have neither been theorized nor systematically explored in great detail by scholars so far.

This paper will eventually explore two data sets on public appearances of top leaders in two different non-democratic regimes: the P.R of China (2003-2014) and the Soviet Union (1972-1979), but for the moment only presents the results of the former. Using Social Network Analysis to examine the drivers of elite public appearance individually and jointly in those two cases, I try reveal patterns that might otherwise remain unnoticed. Analyzing those patterns and examining if they are consistent with the assumption of a unified government in charge of these acts of propaganda is essential, as descriptions of public appearances of authoritarian leaders - and their actions and speeches on that occasion - are an important information source for the analysis of such regimes. If - as seems likely - those leaders have some degree of agency and regimes are very strategic in orchestrating public appearances, it seems necessary to develop a more systematic theory of how and why leaders end up in such public events, and why they act the way they do on those occasions. Firstly: how does the routine of a centralized bureaucracy structure those appearances? What are the regime's incentives to dispatch particular individuals? But then also: What are the individual leader's incentives? Can we say something about the influence of different actors or institutions on those public displays?

I will argue that if individual elites do indeed have very little agency, then co-appearances should be determined by structural factors. Using the networks of co-appearances between Chinese officials in the last 12 years, I show that elites in a similar structural position, that is with the same official position and the same policy expertise, are indeed more likely to appear in public. However, there is also evidence that individuals connected through informal networks are more likely to co-appear. This effect is more pronounced during times when members of such networks might want to or are pushed to signal their loyalty through such co-appearances, namely during the periods of leadership change (i.e. in the year in which a new Politburo is elected and the year

thereafter) and since the start of the anti-corruption campaign.

The following section discusses the extant literature and derives specific hypotheses about patterns in an elite co-appearance network that we should observe if the theories of *central* or *elite agency*, respectively, are true. Section 3 presents the different data sources and basic summary statistics. In subsection 3.2, I discuss the three different sources used to measure informal networks. Subsection 3.1 introduces the public appearances dataset, ending in an overview of how the relative number of appearances of different Politburo Standing Members has changed over time. The different hypotheses on what drives public co-appearances are tested in section 4, and the results buttressed by using different measures for the informal network. Section 5 examines how the importance of those factors varies over time. Section 6 concludes.

2 Public Appearances - with and without elections

As mentioned earlier, most research on public relations in non-democratic regimes paints a "battle" between a unified regime and civil society (Wedeen, 1999, for example), represented by activists, journalists in semi-public or private media, or, more recently, by internet users - see the burgeoning literature on censorship, such as King et al. (2013). This framework is maintained even in the case where the internal workings of the public relations organs are examined, as in most chapters of Brady (2009)'s study on the propaganda organs in contemporary China. The study of this aspect of authoritarian regimes thus seems untouched by the recent developments in this field, which have theorized and unveiled the contradictory interests and forces within a regime (see e.g. Bueno de Mesquita et al. (2003)).

And in fact, particular observers of elite behavior in China have pointed out numerous occasions when the model the all-powerful central propaganda apparatus steering all public appearances in the interest of regime maintenance has broken down. During the Cultural Revolution, for instance, Mao used his supporters in the propaganda system (such as his wife, former actress and head of the Propaganda Department's film section, Jiang Qing) to attack the Central Propaganda Department (Brady, 2009). This internal struggle brought the Department to a standstill, and newspapers and collections of

speeches were published by different more or less independent groups during the subsequent years. Deng Xiaoping's famous Southern Tour is another instance where a public appearance was clearly not just aimed at shoring up support and increasing legitimacy of a unified government, but of a specific faction and policy. During this slew of visits to cities in Southern China, the retired leader propagated economic reforms, allegedly uttering the phrase "to get rich is glorious". Only a month later did the People's Daily pick up the reports from the local newspapers, resulting in (or indicating) the defeat of the more conservative forces in the struggle over economic reforms behind the scenes. Finally, the absence of a specific leader's public appearance has long been seen as a sign that said person had fallen in disfavor, has been purged or otherwise incapacitated. Examples are the speculation surrounding Zhou Yongkang long before his arrest was announced, the gossip on Xi Jinping's absence before appointment in 2012, or Putin's recent unexplained disappearance from public for ten days in the March of 2015. It thus seems worth sketching a theoretical framework for public appearances of elites in authoritarian regimes.

A first step in that direction has been Zhu and Wang (2013)'s examination of the appearance of high-ranking Chinese officials in the CCTV talk show "Policy-Maker's Remark" (*juecezheshuo*). They reveal patterns and find evidence that seem much more consistent with a model of considerable agency on part of the officials and the institutions they work for. Both young, ambitious officials and those nearing retirement age are more likely to agree to be interviewed, for instance - the former presumably because they hope that a good performance on TV might boost their career prospects, the latter - according to their own words - because they feel free to speak openly. Officials working for departments that are seen as being further away from the power center or that rely more on public cooperation to implement their policies also are more willing to appear on the program, another indication that the officials use their public appearance strategically to further their institution's goal by raising attention with public or the center, or counteracting their disadvantaged position within the system.

Those events do not appear to be centrally engineered or guided: the initiative to contact potential interview partners came from the journalists. This is not to say that the "bureaucratic apparatus in charge" model could not turn out to be true - their

interview partners likely got the green light from the Central Propaganda Department before agreeing to appear in the show.

What are the motives and incentives different members of the elite have when it comes to public appearances? What can they gain from publicity?[1]

For publicly elected officials in regimes that hold relatively free and fair elections, the most obvious reason relates to elections: (a) being seen in public doing something or communicating one's plans is good for reelection prospects (*rallying personal electoral support*).

On the systemic level, it probably also increases support for the regime, by (b) giving the faceless administration/government a human touch (*rallying diffuse support for the regime*) and (c) showing to the principal, the masses, that the agent is actually doing something (*raising belief in the efficiency of the system or its transparency*). In other words appearing in public is a way of claiming responsibility for work done by subordinates, in the hope of turning this into personal or systemic electoral support.

Then there might also be some more specific goals a bureaucrat or politician tries to achieve: (d) endorsing a project or proclaiming a new policy might confer the leader's legitimacy onto the object or person praised, thereby rallying support for the target (*endorsement effect*).

What about appearances in a non-electoral context? The *endorsement effect* (d) clearly applies, as photographs from Kim Jong-un's numerous inspection visits to factories all over North Korea indicate. It is not immediately obvious why *rallying personal support* (a) with the masses would help an official in a centralized appointment system like China. In fact, as the example of popular Politburo member Bo Xilai shows, the center might perceive this as a threat. It could, however, be used to rally support at the center, by showing superiors that a local leader is actively implementing the center's policies. *Rallying diffuse support for the regime* (b) or *raising belief in the efficiency of system or its transparency* (c) could apply, but would likely be coordinated by a central authority in

[1]There is obviously publicity that does not require the elites to appear in public - officials can, for instance, also write op-eds in local and national newspapers. However, with a few exceptions (like arrests or trials) public appearances are probably opportunities that are most likely to be at least partially controlled by the elite in question. Identifying who initiated or manipulated public information in other forms of publicity is even more complex in the opaque environment of an authoritarian bureaucracy, which is why this paper focuses on the former.

order to forestall popular rebellions. Especially in an underinstitutionalized context, the appearance of one of the center's representatives may actually raise systemic efficiency itself. The presence of powerful leaders (or the threat thereof) may very well be the only incentive for lower-level cadres to speed up a specific project.

So what about Xi Jiping's appearance in public? It was clearly not designed as an *endorsement* of the restaurant, but some observers have used homonyms of the dishes or the restaurant's name - which can be read as "clean wind" - to speculate that Xi used it to promote the anti-corruption campaign. But it seems most likely that it was designed to *rally diffuse support for the regime.*

Co-appearances that are likely to *rally diffuse support for the regime* or *raise the belief in the efficiency of the system* are mostly those that project regime stability and "business as usual": individuals in charge of specific policies are also those presenting them in public, together with similar experts. The members of bodies that engage in consensual decision-making appear together in public to signal that they stand unified behind the decision. While individual leaders usually also have an interest in those goals, they may also have incentives to defect. Such appearances thus tend to support the theory of a "centralized agency in charge".

If that theory is true, what patterns would we expect to see in the co-appearance network, that is in an network of actors connected by ties indicating that two elites have appeared together in a public event? We would likely see homophily along the positions held by the elites. In other words, ties between members of the Politburo, or between members of the Politburo Standing Committee, are more likely to occur than would be expected at random.

If a centralized agency selects the most expert individuals to represent the government at a specific event, then individuals are likely dispatched together in public because they are particularly suited to comment on an event related to their expertise: generals appear together in public during a military training, foreign policy experts meet the delegates of a neighboring country, etc. In the overall network, we would thus also expect homophily along the expertise of the elites involved.

If elites like to be seen in public with others of similar expertise and position, such patterns could of course also appear under the opposing *elite agency hypothesis*, but it

is not clear why they would be motivated to do so. *Endorsement effects*, on the other hand, are more associated with the competing hypothesis about *elite agency*, except if the event is designed to endorse a central policy or members of the central government in general. But even the latter is potentially ambiguous: shortly before his arrest, Bo Xilai famously invited the central government to inspect the city in which he was Party Secretary, Chongqing, indirectly expressing disappointment about the lack of such an endorsement up until then (Garnaut, 2012). Thus even such endorsements can potentially signal underlying factional tensions and disagreements about policies.

What clearly should not happen under the *central agency hypothesis* is that members of informal patronage networks or factions appear together in public more often than would be expected at random. Such a pattern would make the presence of competing forces at the center visible to the wider elite and the public, and thus threaten the stability of the regime (Schedler and Hoffmann, 2012). MacFarquhar (1971) has for instance documented the factional struggles within the Communist Party using fotographs and the respective positions of elites in seating orders. But why would the elites have an interest in disclosing their affiliation, especially given that "factionalism" is strictly forbidden in the Chinese Communist Party and in many other single-party regimes, and that regime instability might also endanger them personally? In times of intense strife, such as the Cultural Revolution, open allegiance to a specific faction may have had some protective benefits, and publicly appearing with known members of a faction may have been an easy way to send a clear signal to one's enemies that such a defense was available.

While the time period under investigation in this paper is less contentious, a weaker version of the same argument may still apply: clients of patrons may benefit from appearing with their more powerful connection, as it will make them look more "influential" to their own followers, who can see with their own eyes that they can indeed grant access to the center of power. An alternative interpretation of such co-appearances is less strategic, but sees them as the result of a system of elite recruitment through personal channels: personal assistants and *mishu* accompany their mentors during their daily business in order to "learn the ropes", and in the process also happen to appear in public together with them. From the perspective of the patrons, the co-appearance can help to subtly indicate the size of their following to competing leaders. If this theory is true, then we

would expect correlation between the patronage network and the co-appearance network: individuals connected in the former are likely to be connected in the latter as well.

If the theory of *elite agency* is true, we might also observe a quite varying level of activity among different elites that is not related to their policy portfolio or their position, but simply reflects their personal ambitions or sociability.

Finally, there are some patterns that are more ambiguous: it seems likely that more important figures (e.g. members of the Politburo or its Standing Committee) are more active and therefore also appear frequently with others. This could be the result of their personal ambition and power, but might also be the result of bureaucratic protocol to delineate the official hierarchy. The same applies to the frequency with which elites with specific portfolio appear in public: this may indicate either a factional group or the central government trying to to push their specific agenda.

3 The data: summary statistics

3.1 ChinaVitae: co-appearance networks, individual appearances, and general summary statistics

The data for the dependent variable or network has been scraped from the ChinaVitae (http://chinavitae.com/), a website that provides biographical information on more than 5000 Chinese leaders. It also tracks the public appearances of 339 of those leaders. How inclusion in that particular database is decided is not entirely clear, but it does contain all the Politburo Standing Committee members since 2003, and almost all Politburo members, as well as many members of the Central Committee, the officially highest decision-making body in the Chinese Communist Party (CCP). Between 2003 and the end of 2014, it had recorded over 19'000 individual or joint public appearances of these individuals.

To give the reader a sense of how these appearances are distributed over different time periods and among different individuals, figure 1 displays the monthly appearances of the different Politburo Standing Committee members in the first term of Hu Jintao's leadership as CCP General Secretary, and that of Xi Jinping up until the end of 2014. It

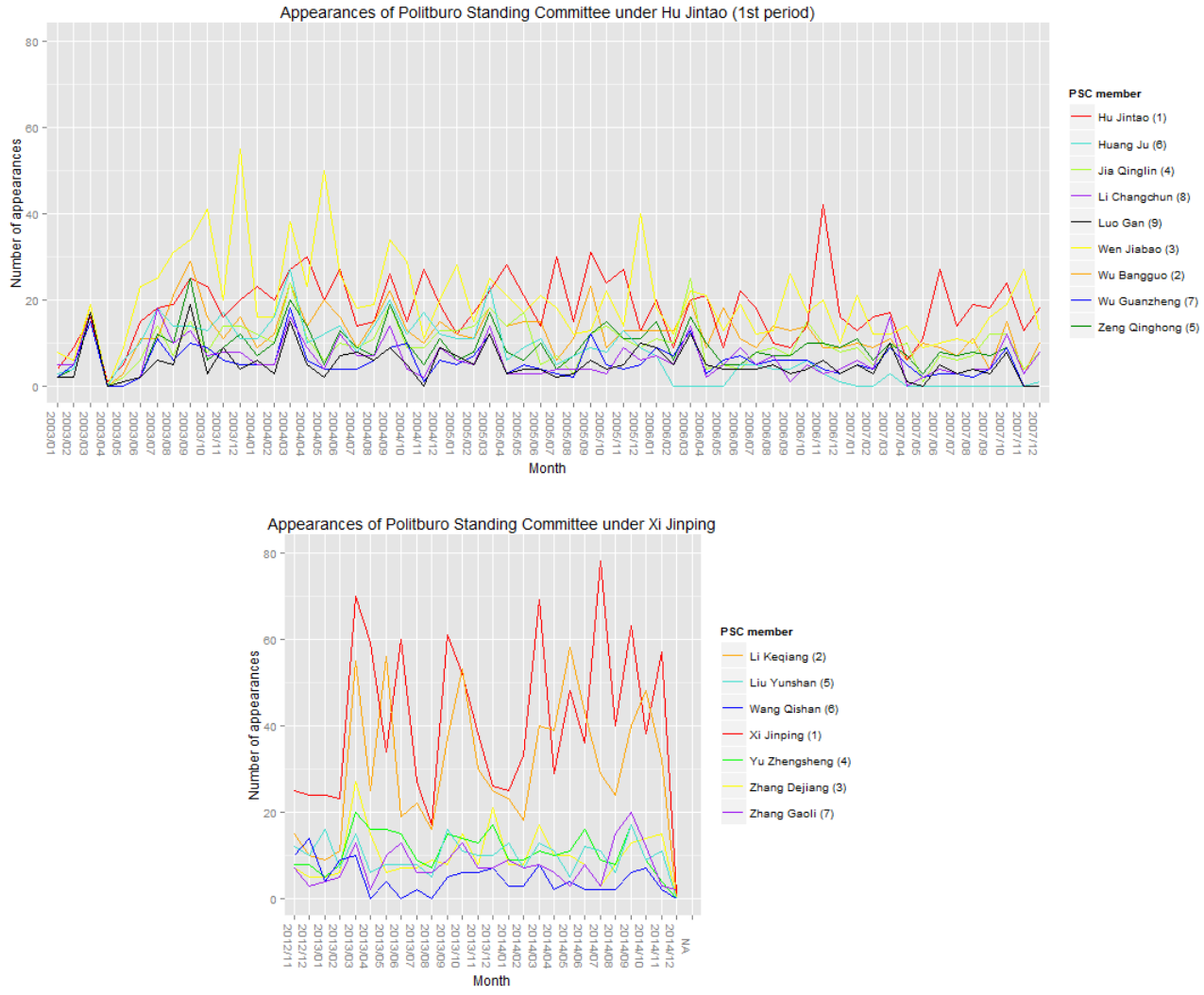

Figure 1: Public appearances of Politburo Standing Committee members. Source: ChinaVitae

is notable that President Xi Jinping and the Premier Li Keqiang appear much more often than their counterparts in the earlier period. This is partly due to the different number of yearly observations: The number of recorded individual events during which officials appear varies over time, and ranges from a low of 728 in the year 2007 to 3084 in 2011.

But it also reflects a broader pattern: while the number of public appearances under Xi closely tracks the official hierarchy (as indicated by the color of the lines following that of the rainbow in descending order), those under Hu are more equal, with Hu himself often overshadowed by his Premier Wen Jiabao. This may reflect the weaker and more consensual leadership style of Hu Jintao.

Apart from the different number of reported events, there are also changes in the kind of events that are being reported: up until 2010, the database contains a few entries with a large number of participants (events in 2009 have up to 151 participants, for instance). Such events are usually reports on the plenary sessions of the Central Committee. The event with 151 participants (ID 7546) in 2009, for instance, reads "Hu Jintao and top leaders attended the Fourth Plenary Session of the 17th Communist Party of China Central Committee" and lists all Central Committee members in the database as attendants. Not only does this lead to a large variation in the network density between different years (from less than 0.15 and to more than 0.8), it is also unlikely that such large events indicate any meaningful association. For the eventual network analysis, any event with more than 23 participants was thus excluded. This cutoff was chosen to ensure that events in which the Politburo appears *in toto*, such as during group photo shootings, are not included in the network either. The exclusion affects only 229 events, and thus less than 1.5% of the data.

The data was then used to create a yearly co-appearance "adjacency matrix", a matrix recording for each individual present both in the ConnectedChina and in the ChinaVitae database how often they have appeared together with each other individual in a specific year. As the statistical method employed for the analysis in sections 4 and 5, exponential graph models (ERGMs), have as yet a limited capacity to deal with weighted matrices, this was converted to a binary matrix. This means that in the networks examined, ties connect two individuals that have co-appeared with another at least once during a given year.

The size of these networks varies over time, starting with 62 individuals in 2003, rising to 84 in 2008, and then declining again to 50 in 2014. The network density, that is the percentage of ties present in the network of all possible ties also varies - the earlier networks are most dense (0.35), while later years are relatively sparse (down to 0.07 in 2011). This should not cause any problems in the analysis, however, as the ERGM takes into account the average density or edge count of the network. Figures 5, 6, 7, and 8 in the appendix display the co-appearance network in each year. The colors indicate the official position at the beginning of the year. The size of the node (actor) is proportional to the number of public appearances in that year. The thickness of the line connecting two

actors is proportional to the number of public events in which both actors participated. As is often the case with layout algorithms used in network analysis, the Fruchermann-Reingold algorithm used here places actors that are connected more closely towards the other actors with which they are connected.

While the decreasing density is visible and results in more disconnected actors in the last 4-5 years, the picture is nevertheless remarkably consistent: Politburo Standing Committee members (in blue) appear on average more often in public than regular Politburo members (in green), as indicated by there larger radius. The latter are in turn more likely to appear than other elites (in red). The positions also indicate a clear hierarchy, or a strong "core-periphery structure": the blue Politburo Standing Committee members form the center of concentric circles, surrounded by the green regular Politburo members, with the remaining red elites forming the outermost circle. The latter are also the most likely to not appear together with anyone else in public.

The structure of the co-appearance network therefore seems to map the official hierarchy: powerful individuals appear often and together with other powerful individuals, while less important individuals appear less frequently, and with less important elites.

3.2 Three ways of measuring informal networks in China

In order to test the hypothesis that informal networks might influence public co-appearance, one needs a measurement of the former. This is no mean feat, given the secrecy in which Chinese informal politics (Dittmer, 1995) is shrouded, and will likely be a very imprecise approximation of the real network. I thus use three different measures, in the hope of convincing readers who might be skeptical that a specific source or approach does indeed capture the true underlying network. The first and main source is a network published by a team of Reuter's journalists on the web site http://china.fathom.info/ in February 2013 under the title "Connected China". The web site is the result of their extensive research into the Chinese Communist Party's informal power structure during the most recent leadership change. I have used the same data and discussed the network's strength and weaknesses in capturing the true network elsewhere (Keller, 2015).

Figure 2 shows the network among the subset of the ConnectedChina elites that are

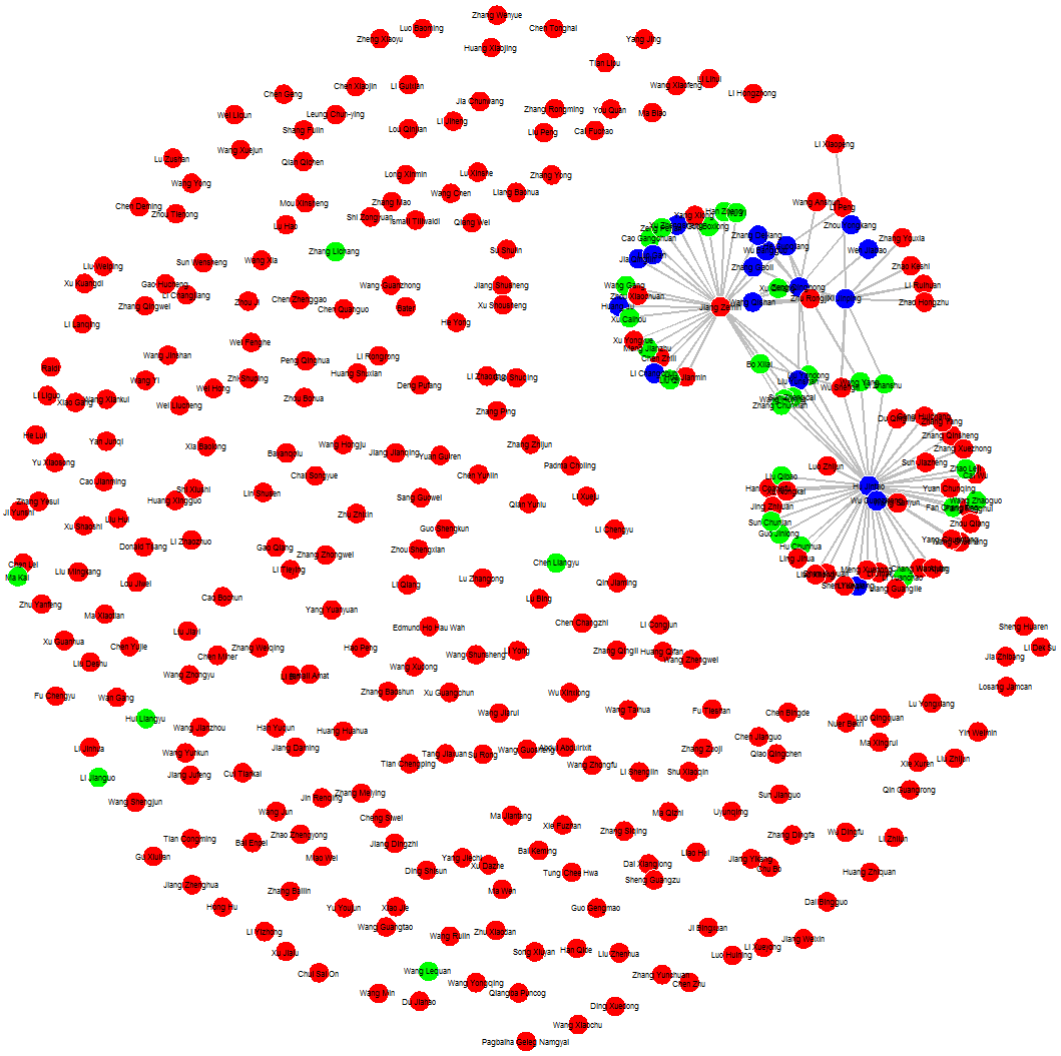

Figure 2: The network among the Chinese elites tracked by ChinaVitae, according to ConnectedChina. Members of the 16th, 17th, and 18th Politburo Standing Committee members in blue, members of the 16th, 17th, and 18th Politburo in green, all other elites in red.

investigated in this paper - those that are also included in the public appearance dataset "ChinaVitae". A large number of the officials appearing in public is not covered by the ConnectedChina data: these are the vast majority of disconnected individuals spread evenly across the area around the connected component on the top right corner.[2] The colors of the actors indicates whether they have ever been Politburo Standing Committee members (blue) or regular Politburo members (green) since 2003. The ties indicate a positive or neutral relationship, according to the ConnectedChina team: 43 of the pairs are "reportedly close to" each other, 32 are said to be "allies", in a number of cases the junior official is supposed to have been "mentored by" (26), "promoted by" (15), "boosted by" (8) or "liked by" (6) the other. Among the other relationships that appear in the network are "colleague" (14), "mishu" (2), and "subordinate" (3). All these are treated as equivalent for the purpose of this analysis, and the two types of conflictual relations that also appear in the ConnectedChina network, "rival" and "complex relationship", omitted. Research such as the ConnectedChina project, which explore and construct the informal network inductively (Keller, 2015), have a tendency to focus on well-known figures. The connected component thus contains almost all Polituro and Standing Committee members in the dataset and centers around the two former General Secretaries, Jiang Zemin and Hu Jintao.

Figure 3 shows the same actors, but connected by ties according to one specific expert on Chinese political elites, Cheng Li, the director of the John L. Thornton China Center at the Brookings Institute. To construct the network at the bottom, I have manually coded relevant articles published until 2003. The articles coded were Li and White (1988, 1993, 1998, 2003) and Li (2002a,b,d,c, 2003b,a). Because of time constraints his book (Li, 2001) was not coded, but the content of many of those chapters is already reflected in his articles. I have noted down whenever Li called two individuals "confidants", "(close) friends", or "(long-time) allies", or when he mentioned one being the other's "protégé", "(personal) secretary" (sometimes, the Chinese term "mishu" was used), "bodyguard"[3], "assistant", "deputy", or "associate". Claims that someone had been appointed or promoted by the patron, or had worked closely together with him were also noted, as well as expressions

[2]Note that some of those "isolates" do in fact appear in the ChinaVitae data, but do not co-appear with anyone else in this network

[3]A term used for the secretary in charge of the personal security of the leader.

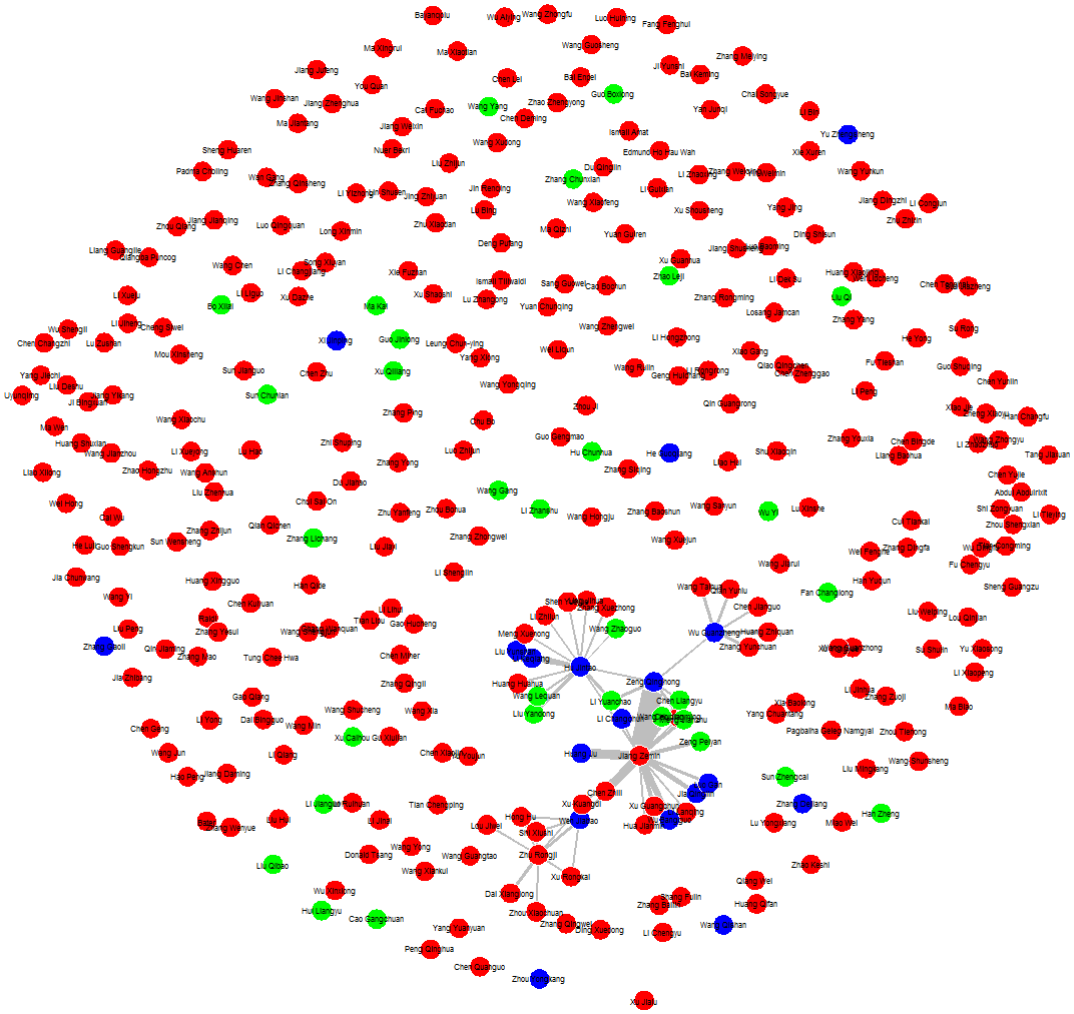

Figure 3: The network among the Chinese elites tracked by ChinaVitae, according to writings of Li Cheng. Members of the 16th, 17th, and 18th Politburo Standing Committee members in blue, members of the 16th, 17th, and 18th Politburo in green, all other elites in red.

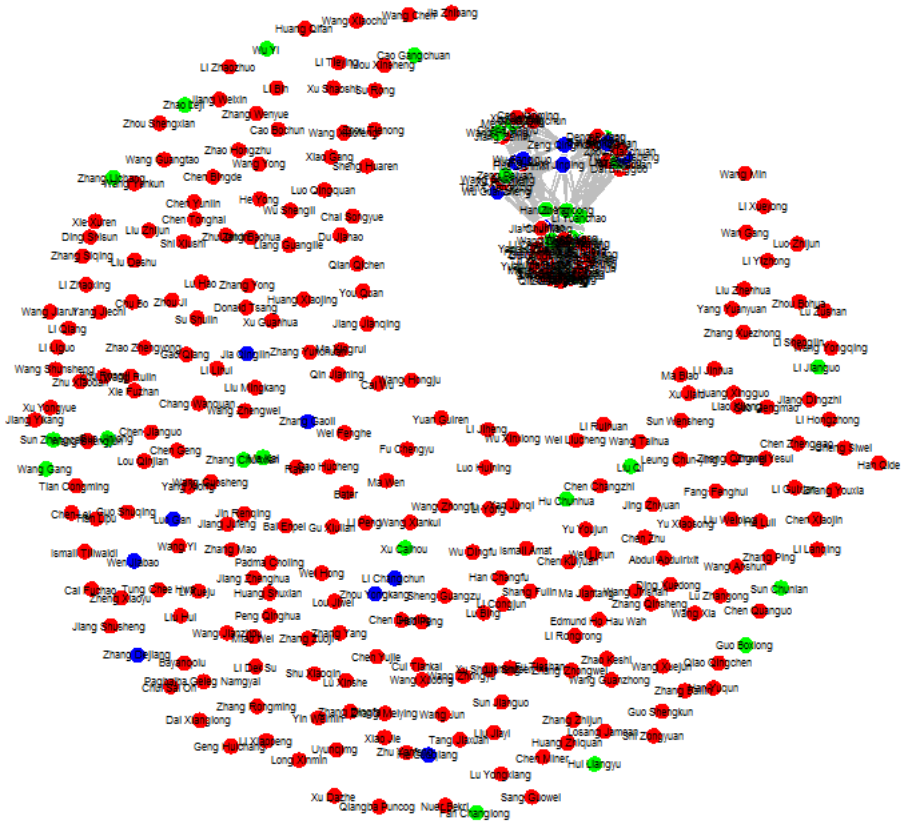

Figure 4: The network among the Chinese elites tracked by ChinaVitae, according to Bo (2007). Members of the 16th, 17th, and 18th Politburo Standing Committee members in blue, members of the 16th, 17th, and 18th Politburo in green, all other elites in red.

indicating kinship (son, father, daughter, father-in-law, brother).

The actors are colored in the same fashion as in figure 2, the thickness of the line connecting them indicates how often they were mentioned as associates in the source material. The connected component in this figure is even smaller than that in figure 2. As discussed in Keller (2015), this is likely a result of the fact that qualitative, inductive approaches to measuring informal networks are time-consuming, forcing the observer to limit the study to a handful of individuals. Furthermore, many of Li's subjects had retired by 2003 and therefore do not appear in ChinaVitae's public appearance dataset.

The third approach to measure informal network follows the factional approach (Whitson, 1969; Li, 2001; Bo, 2007; Tsou, 1995; Nathan, 1973; Huang, 2006; Shih et al., 2012). Despite of the frequent use of the term network, this approach doesn't necessarily lend itself to Social Network Analysis, as many of its proponents seem to conceptualize fac-

tions as groups with a shared identity, based on shared work experience (the "Shanghai Clique" or the "Youth League Faction"), descendance (the "Princelings") or having attended the same university (the "Tsinghua Clique"). It is thus not entirely clear how to visualize the network. Figure 4 follows the most straighforward interpretation, namely that all members of a specific clique share some connection with each other. Factional affiliation is taken from Bo (2007).

Figure 4 has again a large number of disconnected individuals and four very dense, interconnected clusters: the "Princelings" are located to the top right, followed by the "Shanghai Clique", the "Tsinghua Clique" and the "Youth League Faction" in counterclockwise order. Xi Jinping, as the son of Xi Zhongxun and Qinghua alumni, is one of the Politburo Standing Committee members located in the middle between the two clusters, as is Zeng Qinghong, a princeling and member of the "Shanghai Clique".

4 The influence of informal networks on co-appearances

In order to examine which factors influence the formation of ties in those co-appearance networks and to test the main hypotheses, the networks of all 12 years were combined into one big network.[4] This section will discuss the result of an ERGM analysis of this combined network.

Exponential Random Graph Models (ERGMs) are a family of models for statistical inference on networks, in particular for the processes that might have led to the formation of the observed network (Lusher et al., 2012). They measure how an observe network differs from an Erdös-Rényi random graph, that is a network in which each possible pair of actor has an equal probability of forming a tie. ERGMs can account for multiple non-random effects simultaneously, and it is therefore possible to test if a factor has a statistically significant influence controlling for other factors. ERGMs are not identical with logistic regressions on dyadic data, because they do take into account the different

[4] As there is currently no package in R supporting multi-level modeling for ERGMs, I create one large adjacency matrix for all 12 networks, and an additional adjacency matrix that marks the ties that would connect individuals in different years. When the ERGM is estimated, I fix the coefficient for those ties at negative infinity, preventing the algorithm from creating such ties when estimating the model. More specifically, I create a binary adjacency matrix with 1s for all ties between actors of different time periods, enter this matrix as "offset(edgecov(X)" term in the ergm model, and use the "offset.coef" command to set the coefficient as -Inf.

interdependencies among the dyads, e.g. the possibility that a particularly active individual may form ties with more dyadic partners, or that two individuals that are both connected to a third individual may be more likely to form a tie (the friend of a friend being a friend effect).

However, the coefficients displayed in table 1[5] can be interpreted in a similar manner as coefficients in a logistic regression: while their size is not directly interpretable, their sign and level of significance indicate whether and how a specific factor has influenced the formation of ties in the given network more than would be expected at random (holding all other effects estimated in the model constant).

Column 1 in table 1 simply tests if individuals that are said to be associated in the ConnectedChina network are also more likely to appear together in public, i.e. share a tie in the co-appearance network.[6] The coefficient is positive and strongly significant. The only other term in this model counts the number of connections (*edges*), thereby controlling for the overall density of the network.

The illustrations in the previous section indicated that an individual's official position influence who he or she will meet in public. Politburo Standing Committee (PSC) members seem to appear often in meetings with other elites, and particularly with their peers. This could provide an alternative explanation for why patronage networks appear to structure appearances: if a faction leader is particularly adept in placing his followers in high-level positions, then factional co-appearances in public might simply be due to structural reasons. The second model thus corrects for homophily and activity linked to position. Officials were assigned to one category if they were PSC members at the beginning of the respective year, to a second category if they were Politburo members, and to the baseline category if they were neither (similar to categorical variables in regression analysis, one category, the baseline, is omitted in the estimation to avoid perfect collinearity). The two parameters *Position:PSC* and *Position:PSC* thus measure whether an elite holding such a position is more likely to co-appear in public than the baseline elite not holding either position. A homophily parameter is also added to the network, which measures if Politburo members are more likely to appear with other Politburo

[5]The tables were created using the R package *textreg* (Leifeld, 2013), the models implemented via the package *statnet* (Handcock et al., 2008, 2014).

[6]The ConnectedChina network is entered as a "edgecov" term.

	ConChina 1	ConChina 2	ConChina 3	Conchina 4	Li 5	Factions 6
edges	-1.34^{***}	-3.10^{***}	-3.29^{***}	-3.14^{***}	-2.73^{***}	-3.23^{***}
	(0.01)	(0.04)	(0.06)	(0.07)	(0.09)	(0.04)
patronage network	0.79^{***}	0.59^{***}	0.59^{***}	0.64^{***}	0.68^{***}	0.31^{***}
	(0.10)	(0.11)	(0.11)	(0.11)	(0.08)	(0.04)
position:Politburo		1.47^{***}	1.44^{***}	1.49^{***}	0.64^{***}	1.71^{***}
		(0.03)	(0.03)	(0.03)	(0.05)	(0.03)
position:PSC		2.47^{***}	2.51^{***}	2.69^{***}	1.29^{***}	2.84^{***}
		(0.04)	(0.05)	(0.05)	(0.05)	(0.04)
homophily:position		0.57^{***}	0.55^{***}	0.57^{***}	-0.01	0.68^{***}
		(0.04)	(0.04)	(0.04)	(0.06)	(0.03)
Expert:Business			-0.89^{*}	-0.96^{*}	$-\text{Inf}$	-1.10^{***}
			(0.43)	(0.43)		(0.20)
Expert:Party			-0.20^{***}	-0.33^{***}	-0.18^{**}	-0.75^{***}
			(0.04)	(0.04)	(0.06)	(0.03)
Expert:Culture			-2.62^{***}	-2.59^{***}	$-\text{Inf}$	-2.83^{***}
			(0.58)	(0.58)		(0.58)
Expert:Domestic			-0.09^{**}	-0.17^{***}	0.07	-0.43^{***}
			(0.03)	(0.03)	(0.05)	(0.02)
Expert:Education			-0.30	-0.28	-13.38	0.85^{***}
			(0.45)	(0.45)	(175.08)	(0.14)
Expert:EXPO			1.03^{***}	0.94^{***}	-0.05	0.63^{***}
			(0.19)	(0.19)	(0.28)	(0.15)
Expert:Finance			-0.02	-0.10	-1.52^{***}	-0.79^{***}
			(0.17)	(0.17)	(0.30)	(0.12)
Expert:Government			0.19^{***}	0.07^{*}	0.12^{*}	-0.14^{***}
			(0.03)	(0.03)	(0.05)	(0.02)
Expert:Health			0.50^{**}	0.41^{**}	0.60^{*}	-0.24^{*}
			(0.15)	(0.15)	(0.27)	(0.11)
Expert:Inspection			-0.15^{**}	-0.25^{***}	-0.48^{***}	-0.35^{***}
			(0.06)	(0.06)	(0.09)	(0.03)
Expert:Law			-1.93^{***}	-1.97^{***}	-1.86^{***}	-1.04^{***}
			(0.23)	(0.23)	(0.32)	(0.10)
Expert:Media			-2.76^{***}	-2.85^{***}	-0.34	-1.68^{***}
			(0.58)	(0.58)	(0.53)	(0.18)
Expert:Military			0.39^{***}	0.33^{***}	-0.72^{***}	0.06^{*}
			(0.04)	(0.04)	(0.17)	(0.03)
Expert:Olympics			1.34^{***}	1.25^{***}		0.79^{***}
			(0.18)	(0.19)		(0.14)
Expert:Reform			-1.27^{***}	-1.40^{***}	-2.12^{***}	-0.07
			(0.27)	(0.27)	(0.51)	(0.14)
Expert:Sci+Tech			-3.35^{***}	-3.35^{***}	-1.72^{***}	-1.24^{***}
			(0.58)	(0.58)	(0.46)	(0.11)
Expert:Security						-2.11^{*}
						(1.01)
Expert:Minorities						-1.69^{***}
						(0.42)
homophily:Expert			0.61^{***}	0.63^{***}	0.33^{***}	0.61^{***}
			(0.04)	(0.04)	(0.05)	(0.02)
Ind. appearances				-0.00^{***}	-0.00	-0.00^{***}
				(0.00)	(0.00)	(0.00)
AIC	476881.03	471133.44	470066.08	469954.15	163124.13	1771343.17
BIC	476913.27	471197.93	470313.29	470212.12	163346.89	1771656.97
Log Likelihood	-238437.51	-235560.72	-235010.04	-234953.08	-81539.06	-885645.59

$^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$

Table 1: Exponential random graphs models on the co-appearance networks 2003-2014. Standard errors in parentheses. Patronage networks are entered as "edgecov" terms, homophily as "nodematch", Expert and Position as one "nodefactor" each, and and individual appearances as "nodecov" terms. Patronage networks are measured using the Connected China network in models 1-4, using Li Cheng's assessment in model 5, and factional assignment by Bo (2007) in model 6. Baseline (and therefore omitted) term in Position is elites neither in the Politburo or PSC, in Expert the topic foreign affairs.

members, and PSC members more often with PSC members. All three coefficients are positive and significant in most models, indicating that formal positions indeed structure public appearances of their office holders: higher-level officials are more likely to appear in public and appear together with other high-level officials. The coefficient on patronage networks retains direction and significance, however.

Some factions are associated with specific career paths, which likely have granted them specific policy expertise: members of the Shanghai clique, for instance, may be more knowledgeable about foreign trade than agriculture or mining. If policy experts are systematically dispatched to events relevant for their expertise, then the patterns might again resemble those of factionalism. Model 3 thus adds parameters for activity and homophily based on an official's field of expertise. The latter was derived from the topics which ChinaVitae associates with each event. A portfolio was created for each official in each year, by counting how often he or she attended events of each topic. The most common topic was assumed to be the official's field of expertise. The results show that officials with the same field of expertise are indeed more likely to co-appear with each other. The results on the different levels of activity of different experts are not all consistent across the different models, but experts of less represented fields, such as law, science and technology, inspections, culture, party matters, or the Beijing Olympics, tend to be less likely to appear at public events (than experts for domestic affairs, the omitted baseline category). The associations posited by the Connected China team, however, retain their influence.

Model 4 considers the possibility that some officials might just be more active than others. I use the number of single appearances at events to proxy for such "extrovert" personal preferences, but including it does not change the main findings.

Model 5 and 6 conduct robustness checks by using alternative measures for the patronage network. One might for instance be worried that the measurement of the Connected China team, which occurred at the end of the period under examination (i.e in 2012 and 2013) might in turn be influenced by earlier public appearances. I thus use the network hand-coded from Li Cheng's articles up to 2003 in model 5 instead, estimated on the network among the subset of elites that appear both in the ChinaVitae database and in Li Cheng's work. Li's patronage network ties are also significantly and positively associated

with co-appearances. The other coefficients, except for the homophily along positions, remain largely unchanged, but the model has difficulties estimating some of the rarer expert effects, presumably because the smaller network does not contain enough of them. Model 6 substitutes the partonage network with that of the four factional affiliations mentioned earlier, creating a network between all members of the 15th and 16th Central Committee who also appear in the ChinaVitae public appearances dataset. The results remain the same, however.

Thus the analysis confirms the findings of the only similar study that I am aware of, the analysis of co-appearance networks of Soviet officials during the 1970s. Faust et al. (2002) find that even in such a regime steeped with informality, formal positions influence public co-appearances considerably. Unlike them, however, I also actively test the hypothesis that informal ties matter. The finding that this is indeed the case may be more surprising to observers, and is worth further analysis. The following section therefore examines how the influence of patronage networks on public co-appearances varies over time.

5 Co-appearance networks over the years

Table 2 uses model 4, but analyzes the network in each year separately. In all time periods, the structural effects remain robustly significant in the same direction as they were in the combined network, except for the individual appearances, which now have the correct sign - i.e. officials that are more prone to appear in public individually are also more likely to appear together. The informal network, however, has only a significant influence in some time periods, even though the coefficient remains positive except in the year 2005. The years in which informal associates are significantly more likely to appear in public together are those in which one would expect more instability: the years in which a new Politburo comes to power, or the year thereafter (2003, 2007, 2012) and during the anti-corruption campaign (2014). The patterns are roughly similar if the alternative measures for informal networks are used, with Li Cheng's network in general being a weaker, and the faction network being a stronger predictor of public co-appearances. It is unclear if that difference is caused by how well those networks measure the underlying

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
edges	-1.98^{***}	-5.13^{***}	-4.26^{***}	-5.02^{***}	-4.67^{***}	-5.32^{***}	-6.36^{***}	-7.37^{***}	-35.53	-33.85	-33.39	-33.38
	(0.24)	(0.93)	(0.41)	(0.46)	(0.22)	(0.33)	(0.35)	(0.65)	(1191.25)	(1055.15)	(1027.62)	(1103.94)
patronage network	1.43^{***}	0.24	-0.07	0.16	0.66^{**}	0.14	0.03	$0.38^{\cdot}$	$0.57^{\cdot}$	0.77^{**}	0.57	1.47^{***}
	(0.29)	(0.28)	(0.31)	(0.27)	(0.24)	(0.25)	(0.23)	(0.23)	(0.33)	(0.29)	(0.38)	(0.40)
position:Politburo	1.26^{***}	1.57^{***}	1.37^{***}	2.55^{***}	2.10^{***}	2.39^{***}	2.75^{***}	1.84^{***}	0.88^{***}	1.61^{***}	0.55^{***}	0.64^{**}
	(0.15)	(0.17)	(0.16)	(0.21)	(0.14)	(0.16)	(0.21)	(0.13)	(0.16)	(0.13)	(0.15)	(0.23)
position:PSC	2.26^{***}	2.14^{***}	1.77^{***}	3.67^{***}	2.20^{***}	2.91^{***}	3.61^{***}	2.19^{***}	2.07^{***}	1.99^{***}	1.52^{***}	2.60^{***}
	(0.21)	(0.22)	(0.19)	(0.24)	(0.18)	(0.19)	(0.24)	(0.21)	(0.30)	(0.27)	(0.24)	(0.37)
homophily:position	0.68^{***}	0.80^{***}	0.40^{*}	1.38^{***}	1.40^{***}	1.17^{***}	1.97^{***}	0.89^{***}	1.20^{***}	1.41^{***}	$0.36^{\cdot}$	1.07^{**}
	(0.18)	(0.19)	(0.17)	(0.21)	(0.17)	(0.17)	(0.24)	(0.16)	(0.24)	(0.21)	(0.21)	(0.36)
homophily:expert	$0.35^{\cdot}$	0.39^{*}	0.39^{*}	1.00^{***}	0.81^{***}	0.91^{***}	0.83^{***}	0.76^{***}	0.72^{***}	1.17^{***}	0.87^{***}	1.20^{***}
	(0.18)	(0.16)	(0.17)	(0.15)	(0.15)	(0.15)	(0.14)	(0.14)	(0.21)	(0.18)	(0.19)	(0.29)
ind. appearances	0.02^{***}	0.02^{***}	0.03^{***}	0.01^{*}	0.03^{***}	0.03^{***}	0.03^{***}	0.01^{***}	0.00^{***}	0.01^{***}	0.00^{***}	0.00^{***}
	(0.01)	(0.00)	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
AIC	1877.71	1897.96	2256.00	2222.37	2870.96	3278.93	3576.19	3485.89	2782.66	3299.49	2365.49	1467.58
BIC	1944.25	1982.09	2329.72	2291.15	2946.96	3364.09	3656.22	3588.88	2868.17	3388.01	2437.57	1539.13
Log Likelihood	-926.86	-933.98	-1115.00	-1099.19	-1422.48	-1625.46	-1775.09	-1725.94	-1376.33	-1634.75	-1169.74	-719.79

$^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$, $^{\cdot}p < 0.1$

Table 2: Exponential random graphs models on the co-appearance networks in the different years 2003-2014. Standard errors in parentheses. The patronage network is entered as "edgecov" terms, homphily as "nodematch", Expert and Position as one "nodefactor" each, and and individual appearances as "nodecov" terms. Patronage networks are measured using the Connected China network. Baseline (i.e. omitted) term in Position is elites neither in the Politburo nor the PSC, in Expert the topic foreign affairs. "nodefactor" terms for different kinds of experts are estimated, but omitted in the table to save space.

informal structure, or if it is simply due to differing sample size: the intersection between the Li database and the ChinaVitae database is smaller, while that with the faction database is larger than that with ConnectedChina used in table 2.

6 Conclusion

In this paper, I have examined patterns in the public appearances of unelected elites, using a new dataset of public appearances of more than 300 Chinese leaders. I have tested if such appearances are influenced by structural factors indicating tight control by a centralized bureaucracy, either in the form of supervision by a propaganda department, or as strongly institutionalized norms and expectations about protocols to be observed. I have found that despite the importance of informal politics (Dittmer, 1995), patronage (Shih et al., 2012), and factionalism (Nathan, 1973), such formal structures indeed shape public appearances of Chinese leaders. Even among the Politburo Standing Committee (PSC) members, for instance, those with a higher official rank are more likely to appear in public than those further down. PSC and regular Politburo members are also more likely to attend public events than other elites, and have a tendency to appear with peers from the same level.

These observations are unlikely to surprise the experienced China watcher, and their interpretation is ambiguous: do these patterns reveal the hand of a central agency trying to communicate a clear (and undisputed) hierarchy of actors and position within the party and government, or signal elite cohesion? Is it just the result of bureaucratic expediency? Or indicative of a more decentralized process, in which individual elites establish such a hierarchy themselves, by jostling to be seen with other important individuals?

The co-appearance networks also display homophily along expertise: individuals with similar policy portfolios are more likely to appear at the same events. This may be another indication for the influence of institutionalized bureaucratic norms, where time in the limelight is allotted to individuals competent to speak on the topic at hand.

But at the same time, the co-appearance networks also show a persistent effect of informal connections - irrespective of how those patronage networks are being measured. Elites that are allegedly associates, allies, or share a patron-client relationship, are more

likely to appear in public together. This effect is robust to the inclusion of possible confounders.

This pattern is unlikely to have been created through the intervention of a centralized agency, and therefore it must be the result of individual elite's actions. But why would elites be willing to jettison the display of elite unity and risk being accused of factionalism? I have suggested that such co-appearances may be a way for a patron to signal his own and his follower's strength, and that being seen with an important patron may help followers gain standing with their own clients. The fact that the informal network seems to have a stronger effect during periods of leadership turnover and during the upheavals of the anti-corruption campaign would support such an interpretation. An alternative explanation could be that such co-appearances of informal associates is simply a side-effect of how future leaders are introduced to the political arena: they start as clients, secretaries, and assistants of their mentor, whom they follow to public events as well.

While the analysis of appearances and co-appearances has a long tradition among China scholars (MacFarquhar, 1971), this paper is, as far as I know, the first quantitative analysis of the public co-appearances of Chinese leaders - only Kastner and Saunders (2012) have examined the somewhat similar topic of their travels to foreign countries. It is certainly the first to use the social network approach, where the analysis of such public appearances is also a rarity so far (but see Mahdavi (2014)). This paper is thus also a first foray into the more general question of what the public appearance of elites in an opaque government can tell us about the politics behind the scene, and the first systematic analysis of a form of data that has been used on a more *ad hoc* basis by observers of such regimes for decades.

7 Appendix

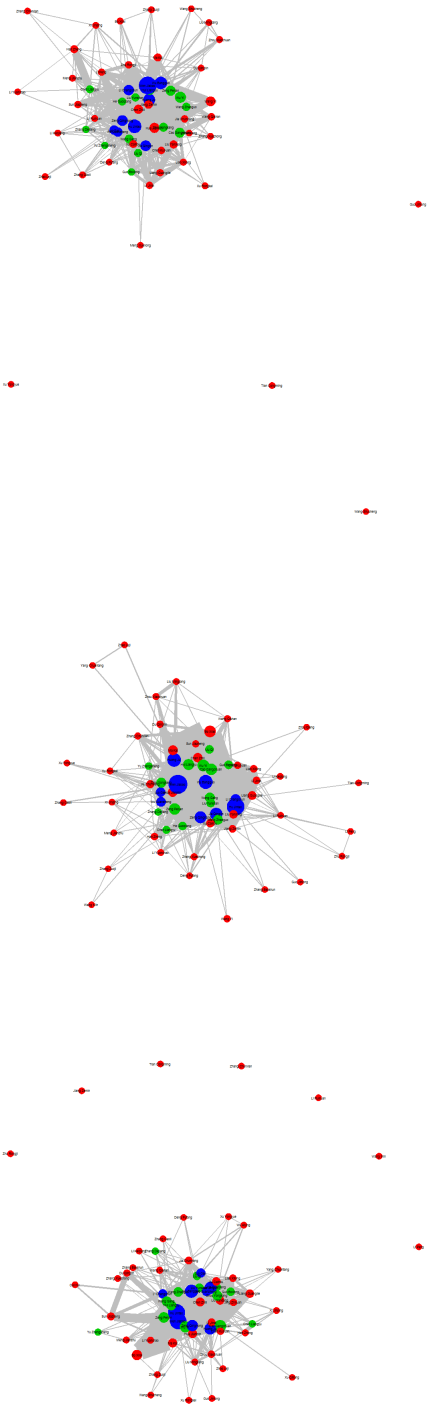

Figure 5: Co-appearance networks from 2003 until 2005

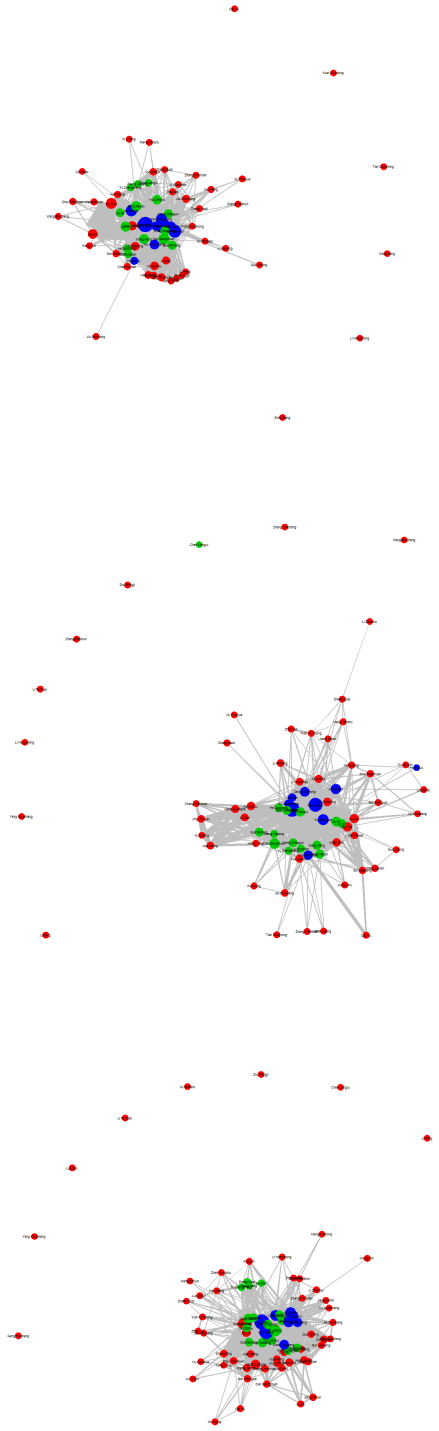

Figure 6: Co-appearance networks from 2006 until 2008

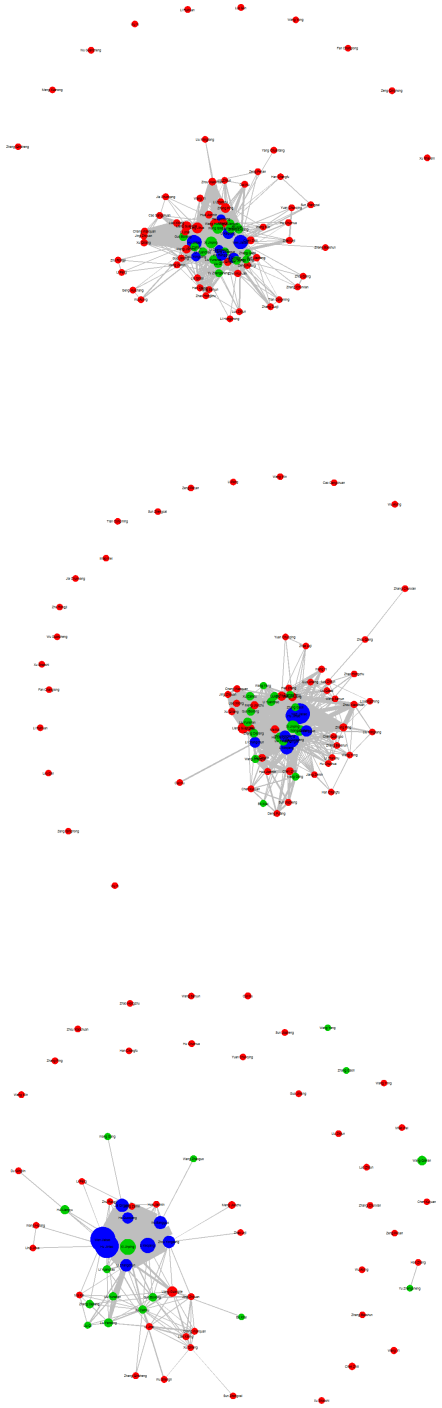

Figure 7: Co-appearance networks from 2009 until 2011

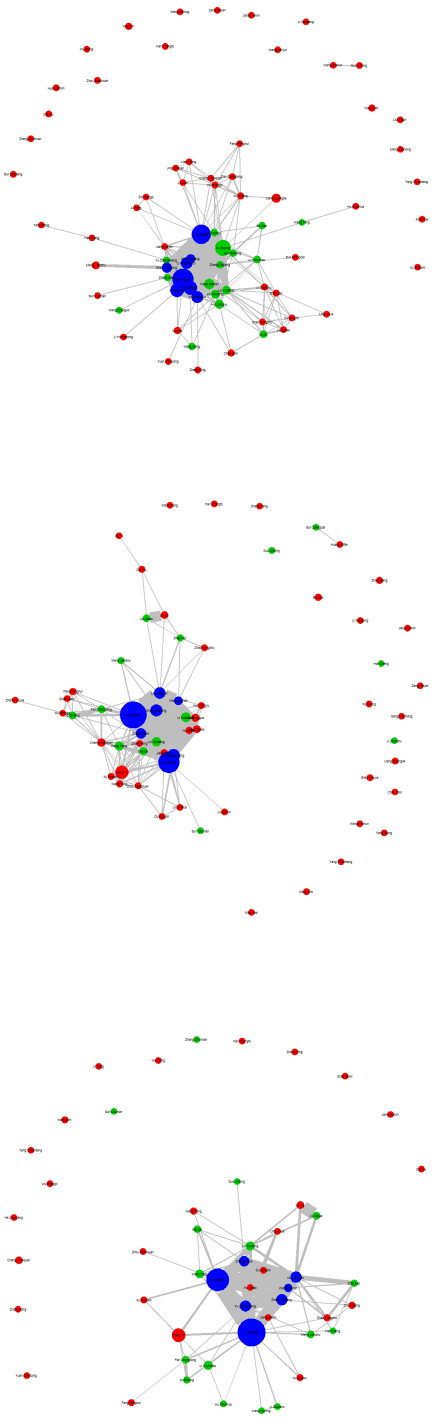

Figure 8: Co-appearance networks from 2012 until 2014

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