

# Friendship Networks and Political Opinions: A Natural Experiment among Future French Politicians

Yann Algan\*      Nicolò Dalvit<sup>†</sup>      Quoc-Anh Do<sup>‡</sup>  
Alexis Le Chapelain      Yves Zenou<sup>§</sup>

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## Abstract

We study how friendship shapes students' political opinions in a natural experiment. We use the indicator whether two students were exogenously assigned to a short-term “integration group”, unrelated to scholar activities and dissolved before the school year, as instrumental variable for their friendship, to estimate the effect of friendship on pairwise political opinion outcomes in dyadic regressions. After six months, friendship causes a reduction of differences in opinions by one quarter of the mean difference. It likely works through a homophily-enforced mechanism, by which friendship causes politically-similar students to join political associations together, which reinforces their political similarity. The effect is strong among initially similar pairs, but absent in dissimilar pairs. Friendship affects opinion gaps by reducing divergence, therefore polarization and extremism, without forcing individuals' views to converge. Network characteristics also matter to the friendship effect.

**Keywords:** *Political opinions, friendship effect, social networks, homophily bias, homophily-enforced mechanism, polarization, extremism, divergence, convergence, learning, natural experiment, dyadic regression.*

**JEL classification codes:** C93, D72, Z13.

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\*Sciences Po and CEPR. Email: yann.algan@sciencespo.fr.

<sup>†</sup>Sciences Po. Email: nicolo.dalvit@sciencespo.fr.

<sup>‡</sup>Sciences Po and CEPR. Email: quocanh.do@sciencespo.fr (corresponding author).

<sup>§</sup>Monash University, Australia, IFN, and CEPR. Email: yves.zenou@monash.edu.

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# 1 Introduction

The recent rise of populism and political polarization are attracting a burgeoning research area on the role of social network in the formation of political beliefs. Many authors attribute political polarization to the rise of social media (e.g., [Pariser, 2011](#); [Sunstein, 2018](#); [Sustein, 2009](#)), by which social networks' echo chambers and filter bubble reinforce prejudices among like-minded group members, while others debate the quantitative importance of such mechanism (e.g., [Allcott and Gentzkow, 2017](#); [Boxell et al., 2017](#), for the 2016 U.S. presidential election). A key missing input in this heated debate remains the causal impact of social networks on belief formation.

This paper seeks to provide a set of estimates of such impact that are immune to the concern of bias due to endogenous network formation, by exploiting a natural experiment at the elite French Institute of Political Studies, Sciences Po, that quasi-randomly allocates first-year students into groups at the beginning of their studies.

While recent research has flourished on the question how political opinion and participation, especially voting, are influenced by leaders and groups (e.g., [Carlsson et al., 2015](#); [DellaVigna and Gentzkow, 2010](#); [Gabel and Scheve, 2007](#)), and by the media (e.g., [DellaVigna and Kaplan, 2007](#); [Gentzkow, 2006](#); [Gentzkow et al., 2011](#); [Gerber et al., 2009](#); [Kendall et al., 2015](#)), in the spirit of the seminal, descriptive study by [Lazarsfeld et al. \(1944\)](#) on friends' influence on US voters, this paper focuses on friendship interactions between individuals in the same group. We investigate how a friendship link between two individuals may raise or lower the chance that their political opinions converge or diverge. We explore how friendship affects individual choices of shared activities, and how it may reinforce or reduce friendship's effect on opinions.

We consider the network of first-year students at Sciences Po, for its central role in the formation of most top French politicians since World War II, and for its students' enthusiasm in politics.<sup>1</sup> Compared with other French higher education institutions, Sciences Po

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<sup>1</sup>Sciences Po's alumni include notably six of the seven French presidents after Charles de Gaulle, namely Emmanuel Macron, François Hollande, Nicolas Sarkozy, Jacques Chirac, François Mitterrand, and Georges Pompidou; and the majority of Prime Ministers.

students are much more interested and proactive in political movements (one out of ten first-year students is already registered with a political party), and have more exposure to politically-oriented events and activities, organized by either student associations or the Institute. We survey all first-year students in March 2014 with incentive-compatible questions to elicit their social networks (the method proposed by [Leider et al., 2009, 2010](#)), as well as questions on political opinions and views, and specify dyadic regressions of pairwise differences in opinions on friendship links between pairs.

The major concern in such regressions is the homophily bias, i.e., omitted variable bias due to endogenous network formation. In presence of homophily (the proclivity to befriend similar individuals) along an unobserved characteristics,<sup>2</sup> the OLS estimate will likely bias the effect of friendship on opinion differences away from zero.

We address this concern with an instrumental variable for friendship that arises from the ‘integration week’ before the first year starts. During this week, students are assigned by alphabetical order to separate groups of around 20, to conduct social activities to facilitate students’ socialization and integration into the new environment. Consequently, common membership in the same group increases the chance of friendship, estimated at 16 percentage points, while it is arguably excludable from the formation of political opinions at the moment of our survey six months later. The same-integration-group dyadic variable can thus serve as instrument for pairwise friendship in the specification of interest, which estimates the Local Average Treatment Effect (LATE) of friendship among complier pairs (those who become friends only due to being in the same group).

Our methodology’s use of an exogenous source of variation in network formation is distinctively novel in the recent empirical and econometric literature on social networks. Traditionally, the endogeneity of network formation received rather limited attention and treatment in studies that rely mostly on restrictions on the structure of interactions and uses of control variables, including fixed effects, with an identification underlined by [Bramoullé et al.’s \(2009\)](#) results, such as [Bifulco et al. \(2011\)](#); [Calvó-Armengol et al. \(2009\)](#); [DeGiorgi et al. \(2010\)](#); [Patacchini and Zenou \(2016\)](#). A different strand in the literature takes a structural approach that explicitly models the formation of network based on assumptions on individuals’ interactions and expectations, and derives identification conditions from the model, including recent developments such as [Badev \(2018\)](#); [Goldsmith-Pinkham and Imbens \(2013\)](#); [Mele \(2017\)](#), as reviewed by [De Paula \(2017\)](#)

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<sup>2</sup>The concept of homophily was first highlighted by seminal studies in sociology since [Lazarsfeld and Merton \(1954\)](#), as surveyed by [McPherson et al. \(2001\)](#). Soon highlighted as a barrier to empirical identification by [Manski \(1993\)](#), it has been further studied in economics by, e.g., [Currarini et al. \(2009\)](#) and [Golub and Jackson \(2012\)](#).

and [Graham \(2015\)](#).<sup>3</sup> Different from those approaches, ours relies on a source of variation that draws its exogeneity and validity from design, not modeling assumptions, and then uses a relatively simple and transparent econometric technique, namely an IV strategy to identify the LATE.

While our use of an exogenous assignment echoes the corresponding literature of peer effects with randomized group assignment (as surveyed by [Sacerdote, 2011, 2014](#)), our focus on friendship links, instead of peer-group relationships, is fundamentally different. That is, friendship is chosen by individuals, not assigned by design, thus it naturally interacts with, and influences individual characteristics and behaviors, as discovered in the case of [Carrell et al. \(2013\)](#).<sup>4</sup> It is thus important to understand the effect of friendship beyond that of peer group assignment.<sup>5</sup>

Our method yields precise and powerful effects of friendship. Connecting two students with a friendship link reduces their differences in political opinions by half a point (on a scale from 1 to 10) after 6 months. The effect is equivalent to a quarter of the mean difference, and a third of its standard deviation. It is considerably larger than the OLS estimate, suggesting that complying pairs, namely those that make friends precisely because of the same integration group, experience a stronger friendship effect than others. It is also much larger than the peer effect of the tutorial groups in which students take all their classes, which stresses the importance of discerning friendship effects from non-friend peers effects using friendship data.<sup>6</sup>

We further find evidence that the estimated friendship effect works best among students with similar pre-Sciences Po political views, through what we call the “homophily-enforced” channel. By this mechanism, individuals with considerable similarity on a dimension tend to strengthen such similarity if they become friends, as friendship makes them interact more on that dimension of similarity. Indeed, among politically-similar pairs, friendship strongly induces more interactions on political issues by causing them to

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<sup>3</sup>For a review of the literature on empirical methods in social networks, also see [Advani and Malde \(2018\)](#); [Blume et al. \(2011\)](#); [Bramoullé et al. \(2016\)](#); [Graham and De Paula \(2018\)](#); [Ioannides \(2013\)](#); [Jackson \(2011\)](#); [Jackson et al. \(2017\)](#); [Topa and Zenou \(2015\)](#).

<sup>4</sup>Similar recent work using exogenous group assignment, such as [Boisjoly et al. \(2006\)](#); [Burns et al. \(2016\)](#); [Rao \(forthcoming\)](#), also explores beliefs and preferences as outcomes, but only as responses to such artificial assignments.

<sup>5</sup>There is also an econometric advantage in considering generic social networks, rather than the special case of peer groups. That is, the generic nature of networks (e.g., based on friendship links) introduces identifying restrictions that avoid [Manski’s \(1993\)](#) reflection problem in linear-in-means models with peer groups, as mentioned in [Jackson \(2008\)](#), and formally proven in [Bramoullé et al. \(2009\)](#) (also see [Lee and Liu, 2010](#); [Lin, 2010](#); [Liu et al., 2014](#)).

<sup>6</sup>This point echoes [Carrell et al.’s \(2013\)](#) emphasis on friendship within peer groups, and [Leider et al.’s \(2009\)](#) finding that, even in a peer group, directed altruism dies out after second-degree friends.

join the same politically-related associations, but not other types of associations. Those pairs end up with a friendship effect on political opinions that is 50% larger than the benchmark effect. In contrast, among pairs who started Sciences Po with far-apart opinions, friendship does not seem to make them interact more in associations, and consequently does not produce a significant friendship effect on the subsequent political opinion gap. In short, similarity breeds friendship, which breeds similarity on the same dimension.

We also discover a markedly asymmetric pattern of the friendship effect on polarization and extremism. Friendship contributes to a narrower opinion gap mostly by reducing the incidence of divergence (when two opinions drift apart), and especially among politically similar students. In contrast, friendship does not encourage two opinions to converge towards each other. Consequently, friendship lowers polarization and reduces the prevalence of extremist political views, while maintaining sufficient diversity of opinions.

Friendship effect heterogeneity also manifests by network characteristics, as we find that the effect is stronger among close friendships and more direct social distance. It extends to second-degree friends (friends of friends), but is not present between network stars (top quartile in eigenvector centrality). Taking into account the effect on second-degree friends, the friendship effect on network can explain 20% of the reduction in overall opinion gaps in the cohort. Those findings connect directly to the recent literature on non-Bayesian learning in social networks.<sup>7</sup>

The rest of the paper unfolds as follows. Section 2 describes the study’s context. Section 3 details our empirical strategy, the timing and design of our surveys, and discusses the collected data. Section 4 presents the main friendship effect on opinions and behaviors. Section 5 investigates the main drivers and mechanisms at work, section 6 shows how the friendship effect varies with network characteristics, and section 7 concludes.

## 2 Sciences Po background and organization

This section provides a description of the context of the natural experiment at Sciences Po, including its role in French politics and the organization of the integration week that

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<sup>7</sup>In the typical non-Bayesian model of learning in networks à la DeGroot (1974), effects of connected nodes are usually modeled as homogenous and linear. The literature on social learning, as reviewed by Goyal (2011), Möbius and Rosenblat (2014), and Golub and Sadler (2016), includes both Bayesian learning (e.g., Acemoglu et al., 2011; Bala and Goyal, 1998, 2001) and non-Bayesian learning (e.g., DeGroot, 1974; DeMarzo et al., 2003; Golub and Jackson, 2010, 2012). Recent designed experiments on the sources and mechanisms of information diffusion (e.g., Chandrasekhar et al., 2018; Grimm and Mengel, forthcoming; Möbius et al., 2015) have shown an important role of non-Bayesian learning.

we exploit as an exogenous source of variation in the formation of social networks.

Sciences Po, or the Institute of Political Studies, has always had a major role in the training of French politicians and high level civil servants, as it was explicitly conceived to provide a modern training for the French elite since its foundation in 1872 following France's defeat in the Franco-Prussia War of 1871. Between 12 to 15% of deputies of the French National Assembly elected in the last decades graduated from Sciences Po (Rouban, 2011), as well as more than fifteen percent of the mayors of cities above 30,000 inhabitants (Rouban, 2014). Sciences Po alumni are also highly present in the government, as well as at the top of the French bureaucracy.

While not all Sciences Po students want to become politician or civil servant, politics is much more important for them than for students from other universities or business schools. One tenth of the students are member of a political party, a very large proportion compared to their age group. Sciences Po students are very different from the students enrolled in public universities. On average they are academically stronger, and come from a much wealthier background.

Most of Sciences Po students have not seen each other before their first year starts, largely because they are competitively selected from high schools from all over France (only 5% of the students coming from abroad).<sup>8</sup> As in other education contexts, friendships are quickly formed within a short span of time, especially through activities that boost exposure and contact among students.

The following three types of activities are the most catalytic for building friendships. The first activity is the integration week just before the scholar year. During this week, incoming first-year students are formally introduced to Sciences Po, and partitioned to integration groups of around 20 each based on alphabetical order. They enjoy a variety of extra-curricular activities, such as games and guided visits of Paris, separately in those groups, in purpose of creating and solidifying links among students.<sup>9</sup> No activity during this week is related to academic or political matters, or students' political opinions. Individual conversations with students reveal that they remember the integration week primarily for its social activities, including bonding between new friends, and not for any

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<sup>8</sup>While we do not observe their high school, the incidence of having been friends from before Sciences Po, as reported in our survey, is extremely rare. In the sample of dyads of students who were assigned to the same integration group, namely the treatment group in our empirical design, there are only two pairs that were friends before Sciences Po, or 0.2% of friendship pairs who were in the same integration group, and 0.02% of all friendship pairs.

<sup>9</sup>While the integration week has been criticized as unrealistic in fostering friendship after just one week, our first stage results in Table 2 lend credit to its designers as a surprisingly effective factor in friendship formation.

other content.

The second type of activities involves tutorial study groups throughout the first and second years at Sciences Po. Students are divided into groups of around 20 each, in which they take all tutorial classes together. The tutorials are mandatory classes that meet for two hours each week, in a total of three over each semester, each one supporting a core first-year course at Sciences Po.<sup>10</sup> The tutorials involve a lot of collective work on assignments and presentations, and are thus key to much of students' social interactions, and conducive to friendship formation. We will control for tutorial group membership throughout this study.<sup>11</sup>

The third type of activities takes place within about one hundred student associations, including notably those with close links to political parties and movements. Many meet frequently in practices (such as in sports and art associations), events, and social gatherings. Association participation is entirely voluntary, and open to all Sciences Po students of any background.

Among many dimensions of heterogeneity that may foster homophily and hinder friendship formation between students of different backgrounds, one stands out in this context: whether a student has been admitted through an affirmative-action process called "Convention Education Prioritaire" (CEP), representing around 20% of each cohort. This admission procedure is reserved for many high schools in disadvantaged areas in France under an agreement with Sciences Po, by which their best students can apply and get admitted through dossier and oral evaluation, instead of the standard, highly competitive written contest. Compared with the rest, CEP students come from poorer families, lower socio-economic backgrounds, and many may struggle academically, at least in their first year (Tiberj, 2011).

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<sup>10</sup>The first-year compulsory courses include microeconomics, macroeconomics, history, sociology, political science, and constitutional law (three in each semester). They are taught in large weekly lectures at the same time for all 800 first-year students.

<sup>11</sup>The assignment into tutorial groups is based on students' choices of tutorial schedules during a very short opened window at the beginning of the year, with no information on each group's instructors, nor other relevant information except scheduled hours. As most slots run out quickly in matter of minutes, students have little control over their tutorial group assignment, and it was almost impossible to coordinate on the same group. Thus, in practice, the tutorial group assignment can be considered as arbitrary as randomized. In this paper, we use the tutorial group membership as a control variable with a meaningful coefficient, but not as an instrumental variable of friendship, because common membership in a tutorial group throughout the year also correlates with other continual factors such as the common instructors' influences, and invalidates the exclusion restriction.



## 3 Empirical design, methodology, and measurement

### 3.1 Empirical strategy

Our empirical design focuses on the dyadic relationship among all pairs of students  $(i, j)$ , between a measure of pairwise difference  $DY_{ij}$  and a measure of friendship  $Link_{ij}$ ,  $DY_{ij} = g(Link_{ij}, \mathbf{X}_{ij}, \eta_{ij})$ . Undirected friendship  $Link_{ij}$  is defined as an indicator of whether  $i$  or  $j$  names the other as friend in their answers. We focus on the undirected network of friendship and use all symmetric dyadic variables.<sup>12</sup>  $DY_{ij}$  is the absolute difference between  $i$  and  $j$  of the variable  $Y$ , such as political opinion on a scale from 1 to 10.  $\mathbf{X}_{ij}$  and  $\eta_{ij}$  represent respectively observable dyadic covariates and the unobservable idiosyncratic residual.  $\mathbf{X}_{ij}$  includes all observable pairwise variables representing commonness and differences across predetermined dimensions: the pre-Sciences Po difference in political opinions  $DY_{ij}^0$  (surveyed from a retrospective question), common gender, common nationality, common academic program, common admission type (essentially regular admission or Affirmative Action admission), common graduation with honor from high school, common district (French département) of high school, common professions of parents, common current residence's ZIP code, dummies for being both female, for being both French, for being both French with double nationality, and the difference in tuition fees that proxies for the difference in parents' income.<sup>13</sup> As will be shown, this list of observables has very limited explanatory power on friendship.

We are generally interested in the average causal effect of friendship on pairwise differences of opinion, as  $\beta_L = \mathbb{E}[DY_{ij}|Link_{ij} = 1, \mathbf{X}_{ij}] - \mathbb{E}[DY_{ij}|Link_{ij} = 0, \mathbf{X}_{ij}]$ . A negative (positive)  $\beta_L$  means that friendship makes people's opinions closer (further apart) over the observed period of 6 months from August 2013 to March 2014, and vice versa. Under the conditional independence assumption that conditional on observables, friendship is assigned exogenously, a simple OLS regression would provide an unbiased estimate of  $\beta$ . However, this conditional independence assumption is likely violated in presence of homophily in friendship formation.

The homophily bias occurs when there is a certain unobserved dimension  $U$  such that

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<sup>12</sup>We use the OR network, similar to [Leider et al. \(2009\)](#) and many other papers that survey friendships. The results remain robust to using the AND network.

<sup>13</sup>We create those dyadic control variables based on the list of predetermined variables that we could collect from administrative data, and on our assessment of a priori importance of those conditions in the formation of friendship among Sciences Po students. Unfortunately, there is no better information on the precise household income, as the administrative data have a very high rate of missing observations for this question. The inclusion or exclusion of any dyadic control variable does not make any noticeable qualitative or quantitative difference to our results.



(i) individuals' similarity  $U_{ij}$  correlates with the formation of friendship links  $Link_{ij}$  (homophily), and (ii) it also influences the outcome  $DY_{ij} = g(Link_{ij}, \mathbf{X}_{ij}, U_{ij}, \eta_{ij})$  (outcome-relevance). When friendship formation is empirically related to  $U_{ij}$  as  $U_{ij} = f(Link_{ij}, \mathbf{X}_{ij}, \varepsilon_{ij})$ , then the homophily bias due to the omission of  $U$  is  $\frac{\partial g}{\partial U} \times \frac{\partial f}{\partial Link}$ .<sup>14</sup> It is larger when  $U$  is more important to the outcome, and when it is more associated with link formation. In our context, the bias likely pushes the OLS estimate away from zero. This remains a thorny issue in existing estimations of effects of network links, and one that, to our best knowledge, has not been addressed in the empirical literature using an exogenous source of variation.<sup>15</sup>

Our key methodological innovation consists of treating the homophily bias by instrumenting  $Link_{ij}$  by the indicator  $IG_{ij}$  of whether  $i$  and  $j$  participated in the same integration group ( $IG$ ) at the beginning of the year (August 2013). We argue that this instrument satisfies all the LATE conditions (Imbens and Angrist, 1994).

First, in section 4.1, we will test the instrument's relevance, namely  $\beta_{IG} = \mathbb{E}[Link_{ij}|IG_{ij} = 1, \mathbf{X}_{ij}] - \mathbb{E}[Link_{ij}|IG_{ij} = 0, \mathbf{X}_{ij}] \neq 0$ . This first stage condition is satisfied if the integration week is a strong enough catalyst to form lasting friendships among students.

Second, this instrument's exogeneity is based on the mechanism of assignment into integration groups by *alphabetical order* of the family name, arguably independent from individual characteristics that matter to the formation of links. We will further test the claim of exogeneity in a balance test in section 3.5.

Third, the instrument  $IG_{ij}$  arguably satisfies the exclusion restriction. The integration week was exclusively meant to facilitate students' familiarization and socialization with their new peers and new environment in Paris, without any academic- or political-related activities. The integration groups are dissolved after that week, and does not relate to any other academic or extra-curricular activities afterwards.<sup>16</sup> Hence, it should have no meaningful channel to affect the formation and adjustment of individual opinions six months later, which guarantees the exclusion restriction of the instrument.

Fourth, it is natural to make the monotonicity assumption that being in the same  $IG$  always (weakly) increases the incidence of friendship formation for any pair of potential

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<sup>14</sup>More precisely, the partial derivatives denote corresponding regression coefficients, controlling for covariates  $\mathbf{X}_{ij}$ . The direction of causality in those regressions does not matter to the homophily bias.

<sup>15</sup>In the spirit of Altonji et al. (2005), we may gauge the size of this bias due to unobservables by estimating the bias when the observables  $\mathbf{X}_{ij}$  are deliberately omitted, and then argue that the homophily bias due to  $U$  is of the same order of magnitude. However, this method is weak and unreliable in case  $\mathbf{X}_{ij}$  only explains a small fraction of the variation in  $Link_{ij}$ .

<sup>16</sup>No subsequent academic or extra-curricular activities among Sciences Po students are organized based on alphabetical order.

friends, such that  $f(IG_{ij} = 1, \mathbf{X}_{ij}, \varepsilon_{ij}) \geq f(IG_{ij} = 0, \mathbf{X}_{ij}, \varepsilon_{ij}) \forall (i, j)$ .<sup>17</sup>

Taken together, those four assumptions guarantee a *causal* LATE interpretation of our estimate (Imbens and Angrist, 1994). That is, our IV estimate can be interpreted as the average causal effect of friendship on the “compliers” pairs of students, namely those who would have become friends thanks to being in the same *IG* group in the integration week. Since this is a condition that characterizes a rather strongly-complying group of student pairs (for instance, pairs that only become friends after weeks or months of acquaintance are not included), we remain cautious in generalizing our estimates to all possible pairs of Sciences Po students. However, in Imbens’s (2010) spirit of “better LATE than nothing”, we argue that the correct estimation of the LATE in our context already lays strong ground for further research on transmission of beliefs among students.

In a dyadic setting, each individual is repeated in her pairs with all other students, resulting in natural correlations between the residual terms of pairs sharing an individual. Furthermore, there can naturally occur common shocks within the same group, such as teacher’s biases, that could drive all group members’ opinions. While those shocks are uncorrelated to our instrument, and cannot bias our IV estimates, they produce clustered standard errors, and must be taken care of in order to obtain correct standard errors and confidence intervals.

Throughout the paper, we choose to correct for potential clustered standard errors by a two-way group clustering strategy. That is, we allow for arbitrary correlations in the idiosyncratic component  $\eta_{ij}$  between any pair of observations that overlap in a group.<sup>18</sup> We make sure results are robust to different types of clustering correction.

In addition to the predetermined covariates, we also include  $TG_{ij}$ , a dyadic indicator

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<sup>17</sup>Its violation would mean the rather improbable event of a “defier” pair that would have become friends had they not met in the same *IG*, but would not have become friends because they met early in the same *IG*. Even without the monotonicity assumption, de Chaisemartin (2017) shows that, under a much weaker condition, one could still interpret the IV estimator as the Average Treatment Effect among a subgroup of compliers.

<sup>18</sup>Cameron and Miller (2014) discusses Fafchamps and Gubert (2007) method to fully account for all possible correlations between all dyads that overlap with a group or share an individual. Unfortunately in this case, Cameron et al. (2011) decomposition of the sandwich formula for standard errors (used for a fast, economical calculation of the two-way clustering correction) becomes intractable in this case. The only possible implementation is to undertake the full calculation of Fafchamps and Gubert’s formula, which requires an excessive amount of computing memory and time, given our large sample size. Therefore, throughout our paper, we choose to implement a simplified version of this method, in which we allow for non-zero correlations between any residual terms  $\eta_{ij}$  and  $\eta_{i',j'}$  such that either  $i$  and  $i'$  belong to the same group, or  $j$  and  $j'$  belong to the same group, or both (thus ignoring the possible same-group memberships of  $i$  and  $j'$ , or of  $i'$  and  $j$ ). We have also fully implemented Fafchamps and Gubert (2007) formula in a few benchmark regressions, and found similar and better levels of standard errors and p-value.

whether two students are members of the same tutorial group or not. Since membership in a specific tutorial group is essentially arbitrary, a linear regression can estimate the causal average effect of being in the same tutorial group on the outcome, namely  $\beta_{TG} = \mathbb{E}[DY_{ij}|TG_{ij} = 1, Link_{ij}, \mathbf{X}_{ij}] - \mathbb{E}[DY_{ij}|TG_{ij} = 0, Link_{ij}, \mathbf{X}_{ij}]$  (the partial effect of  $TG_{ij}$  on  $f(\cdot)$ ). It is then possible to compare the different effects of tutorial group membership and friendship on the difference in opinions.

## 3.2 Timing of events

We conduct our first and major survey in March 2014, and a follow up survey in July 2015. The first survey in March 2014 used strong participation incentives, with 25 mini iPads to win, and recorded 526 participants out of the 800 first year cohort. The second survey in July 2015 was much less well-funded, and could only attract 300 participants. Overall, there are 235 students who have completed in both surveys. The paper makes most use of the first survey, while the second only serves in robustness checks.

The first survey in March 2014 collects information to construct the network of friends among first-year students. They are also asked about their contemporaneous political opinions in March 2014, as well as their recalled political opinion from August 2013 before they join Sciences Po. Those questions are asked again in the second survey in July 2015, about both contemporaneous opinions and recalled opinions from March 2014 (thus it is possible to compare actual versus recalled opinions). The timing of events and surveys is summarized below:

(1) **August 2013.** In the *integration week* preceding Sciences Po’s official starting date, incoming students are partitioned by alphabetical order of last name into groups of around 20, and undertook many activities meant to help them socialize and familiarize with the environment in Paris.

(2) **September 2013.** First-year students start the scholar year with the same set of six first-year mandatory core courses, divided into three in each semester. Every week, each course is composed of a full-cohort lecture, followed by an additional session in a small *tutorial group* of around 20. The process of tutorial group allocation is rather arbitrary and exogenous.

(3) **March 2014:** We survey all the 800 first-year students on their social networks and their *current* political opinions as well as their political opinions in August 2013 before entering Sciences Po. 526 out of the 800 first-year students participated in the survey.

(4) **July 2015:** We survey the now-second-year students. In particular, we ask their *current* political opinions and their political opinions in March 2014. 300 students completed in the survey.

### 3.3 Survey design

Most of our analysis is based on first-year students who enter Sciences Po Paris starting in September 2013. In March 2014, we run an internet-based survey among all 800 first-year students, and ask incentive-compatible questions to elicit social networks (as in [Leider et al., 2009, 2010](#)). We also survey their cultural values and political opinions.

In empirical studies on networks, a large rate of non-response can produce unpredictable biases in the estimates ([Chandrasekhar and Lewis, 2011](#)). We thus offer strong material incentives in the first survey in the form of a lottery for fifty mini iPads at a monetary value of approximately 300 Euros each, so each student has an average probability of about 9% to win. Eventually, 68.4% (547 out of 800) of the students answered to at least some question in the survey, and 65.6% (526 out of 800) completed the whole survey. This is about the same level of participation as the best-participated studies of social networks of students, such as [Leider et al. \(2009\)](#) or [Goeree et al. \(2010\)](#). It is well above the standard participation rate of around 20% found in studies using online surveys ([Cantoni et al., 2017](#)).

In order to incentivize truthful answers, we design the elicitation of friendships as a coordination game, similarly to [Leider et al. \(2009\)](#). Not only do we ask students to name a list of friends of up to 10 names, but we also ask how they meet each of them, how much time they spend together, and in which activities, and how strong do they evaluate their relationships. We announce in the survey that their answers would be cross-checked with those of the other students, and that if both answers match, they would gain points, later converted into an additional probability of winning the gift. We do not disclose the exact mechanism, in order to avoid that some students engaged into strategic behavior and try to actively coordinate with other people. The survey is carried out during a vacation week, which limit the possibility for the students to interact with each other and to complete the survey together. To further avoid the possibility of collusion on the friendship questions, we censor the top 5% of the sample by the amount of time spent on the friendship question, in order to avoid individuals who have spent too much time pondering this question.<sup>19</sup> We also require that they complete the whole questionnaire in

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<sup>19</sup>This is equivalent to dropping individuals who spend more than 81.625 seconds per friend on that

order to be included in the lottery. We present in Appendix the details of the questions and procedures.

The second part of the survey was devoted to questions about political opinion and values. As stated above, in the first wave, we asked them their political opinion on March 2014, and the summer before admission (August 2013) while, in the second wave, we again asked them their political opinion on July 2015, and more than one year before (March 2014). These questions were asked by using a Likert scale from 1 to 10 (1 being extreme left and 10 extreme right). We also ask if they were a member of political party (today, or in the past) and questions on related political opinions such as attitudes toward immigrants, by using question taken from the World Value Survey.

### 3.4 Data description

We consider the (symmetric) OR network in which two students are linked if at least one nominates the other. Table 1 Panel A describes the quality of the network survey. About half of the nominated friends reciprocate, a considerably larger rate than in the literature since [Leider et al. \(2009\)](#). The probabilities of a well-matched answer in terms of the context of the first meeting between the two friends, of the amount of time spent every week, of the type of activities mostly spent together, and of the self-evaluated strength of friendship are respectively 76%, 52%, 46%, and 52%, quite larger than in [Leider et al. \(2009\)](#). If answers are completely made up and randomized, the probability of matching on any of those dimensions would be rather low, given that respondents have many choices for each answer (especially in the question on the context of their first meeting). Taken together, those statistics imply that the survey answers are indeed very reliable, especially for the purpose of picking up friendships.

Table 1 Panel B reports the major statistics on the number of friends and the social network structure. The average and maximum number of nominated friends per student is 8.8 and 21, respectively, with a very high variance. Moreover, there seems to be some small world properties with a very small average path length (3.7) and a relatively small diameter (9). The clustering coefficient is also relatively high, which means that roughly 25 percent of students have friends of friends who are friends. In terms of network

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question. The results remain practically the same over a broad range of possibilities of right tail censorship. Right tail censorship looks necessary, given that at the top of the distribution certain students spend up to half an hour per friend. Results are also robust to left tail censorship, although the case for censorship is much less clear, as the fastest answers still took an acceptable amount of time (more than 10 seconds on average).

position, the mean eigenvector centrality is relatively low (0.0361).

Panel C shows the descriptive statistics of the friendship dyadic measures. We distinguish between the *full sample* (column 1) of all students who have participated and the *benchmark sample* (column 2) that corresponds to the benchmark regression (the two samples differ slightly because of certain missing values). By nature, the share of measured friendship links is relatively small at 1.6%, and that of second and third order indirect links are larger at 9.3% and 38%, respectively. The dyadic same group variables are of similar magnitudes, at an average of 1.6% for same integration group, and 2.3% for same tutorial groups. The friendships are partitioned rather evenly across different levels of friendship strength, especially from 2 (ordinary friends) to 4 (very close friends). We also observe that there is little difference between the full sample and the benchmark sample.

Panel D lists the descriptive statistics of students' political opinion and behavior. While political opinion slightly shifts to center-left over time (i.e., to lower value, as 5.5 represents the center), participation in political parties has increased substantially. Meanwhile, the variance of political opinion decreases by 24 percent, as the measured standard deviation of opinions in March 2014 is only 1.76 on a scale of 1 to 10.<sup>20</sup>

[Insert Table 1 here]

Figure 1 shows the distributions of political opinions in March 2014 (orange) and in August 2013 (green). The bimodal distribution in 2013, with two modes at 4 and 7 corresponding to rather mainstream left-right politics, becomes unimodal in 2014 with strongly dominant center in 5-6. That fact, and a strong reduction in right to extreme right positions (8-9-10), altogether explains the net decrease in variance of opinion.

[Insert Figure 1 here]

### 3.5 Exogenous assignment mechanisms and balance test

Our instrumental variable strategy depends fundamentally on the claim that the assignment into integration groups by alphabetical order of the students' family names is exogenous. We check that alphabetically close family names do not carry other information that could stack up students with similar backgrounds in the same group. First, we

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<sup>20</sup>Appendix Table A1 describes in details all variable definitions, and Appendix Table A2 completes the descriptive statistics of other variables used in the empirical analysis.

show in Table 2 the results of a balance test of exogeneity in a linear regression of  $IG_{ij}$  on all observable pairwise covariates.<sup>21</sup> In comparison with the mean and standard deviation of the dyadic variable  $Link_{ij}$  (respectively 0.017 and 0.13, as shown in Table 1.B), all coefficients in Table 2 are very small and mostly insignificant. Among the few significant coefficients, it is natural to find the variable common program, which specifies mostly dual-degree programs joint with other universities, in which students simultaneously take courses at both Sciences Po and the other institution, therefore are grouped together since the integration week. We make sure to control for this covariate throughout the paper.<sup>22</sup> (Removing all students from double-degree programs leaves all estimates practically unaltered.) Finally, another significant coefficient is that of the same high school major. As its magnitude is also small, and its sign is opposite to that predicted by homophily, we interpret it as significant by chance.

*[Insert Table 2 here]*

Second, we run robustness checks by dropping all last names starting with each letter, or dropping all students with a specific non-French nationality, given the potential concern that the family names of certain ethnic origin may cluster by certain letter (such as Chinese family names starting with Z or W, or Vietnamese names starting with N.) We also run robustness checks in which we exclude all French family names starting with “de”, which might correspond to an aristocratic family background. The results shown in Appendix Tables A9 and A10 are strongly robust to all those concerns.

### 3.6 Retrospective answers and validity of estimates

We use a retrospective question in the survey in March 2014 on students’ political opinions just before they join Sciences Po (see the timing in section 3.2), which raises a potential concern that retrospective answers may incorporate a bias in the direction of the respondent’s opinion today. While such a measurement error regarding retrospective survey questions on events and answers may be rather small after only 6 months,<sup>23</sup> the

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<sup>21</sup>Standard errors are clustered two-way among observations sharing either student  $i$  or student  $j$ . This clustering approach is less conservative than the standard two-way clustering by  $i$ ’s and  $j$ ’s groups carried out throughout the paper, so we expect to have higher power in detecting observables that significantly correlate with  $IG$ .

<sup>22</sup>This is the standard method to deal with imbalances in experimental samples: see Bruhn and McKenzie (2009) for a discussion on common practices of balance tests in field experiments.

<sup>23</sup>Wagenaar (1986) finds that 20% of subjects forget key personal events after one year. See review by Bradburn et al. (1987).



bias on opinions may also relate to the rationalization of new information that results in a hindsight bias, according to which individuals reconstruct their past opinion in light of their newly updated opinion (Fischhoff and Beyth, 1975). It is thus useful to investigate our method’s robustness to this issue.

To evaluate the magnitude of the retrospective answer measurement error, we run a second survey in June 2015 and collect data from a retrospective question on their recalled opinion back in March 2014, then compare them with the actual answers in 2014. First, Appendix Table A3 shows the joint distribution of both surveyed and recalled opinions for 2014. The mass is clearly concentrated on the diagonal, with 90% of the observations not differing more than 1 point between the two measures, implying a very strong correspondence between recalled and actual answers. This lends confidence to the accuracy of the recalled opinion expressed in March 2014 over the political opinion in August 2013.<sup>24</sup>

Appendix Table A4 presents further results on students’ recall error, measured as recalled opinion for 2014 minus actual opinion surveyed in 2014. The absolute magnitude of the recall error has practically zero partial correlations with past and present actual political opinion, as shown in column 1. However, in column 2 we do find evidence that the signed recall error is strongly correlated with the change in opinions from 2014 to 2015, signifying that recalled opinions are biased towards present opinions (as surveyed in 2015) by the same magnitude as estimated, e.g., by Biais and Weber (2009); Camerer et al. (1989); Fischhoff and Beyth (1975).

How much can the recall error affect our results? First, if less than 10% of answers suffer a recall error, the resulting bias on our benchmark result would probably be minimal. Second, since we mostly control for initial political opinions of August 2013, if this variable is biased towards actual opinions of March 2014, it would create an attenuation bias of our coefficient of interest towards zero. Indeed, the recalled opinion with error will tend to absorb more variation in the outcome variable than the actual initial opinion, and by doing so it reduces the coefficient of the other variables.

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<sup>24</sup>Unfortunately, due to budget constraints in 2015, the participation rate in 2015 is much lower than in 2014, resulting in a small sample that overlaps between the two waves that we cannot use as a panel to study friendship effect.

## 4 Friendship effect on opinions and behaviors

### 4.1 Same-group exposure and friendship formation

We first establish the relevance of the instrumental variable  $IG_{ij}$ , i.e., the causal effect of participating in the same integration group in August 2013 on forming and maintaining a lasting friendship 6 months later. Columns 1 and 2 of Table 3 present the regression of  $Link_{ij}$  on  $IG_{ij}$ , with and without observable covariates  $\mathbf{X}_{ij}$ , yielding an estimate of  $\beta_{IG} = \mathbb{E}[Link_{ij}|IG_{ij} = 1, \mathbf{X}_{ij}] - \mathbb{E}[Link_{ij}|IG_{ij} = 0, \mathbf{X}_{ij}]$  in the coefficient of  $IG_{ij}$  of around 16%. The F-statistic in all columns clearly shows that the instrument is strong. In comparison, column 3 shows the corresponding effect of the tutorial group on friendship formation at around 36%.

*[Insert Table 3 here]*

It is remarkable that this coefficient is more than 10 times larger than any coefficient on observable predetermined characteristics (the next largest coefficients are on students' ZIP code and high school département.), and about half the size of the same tutorial group coefficient.<sup>25</sup> It shows that “chance exposure” to other students during the first week of a student's college life has an effect on friendship formation several orders of magnitude larger than that of most predetermined characteristics that are typically observed or obtained from administrative records.

The result can be further interpreted as evidence of the first week's special role as a “window of opportunity” for friendship formation. In perspective, the one-week-long integration exposure has about half the power of constant weekly exposure in the tutorial groups during 6 months (which also includes off class interactions due to academic assignments in tutorial groups). It is plausible that friendships tend to form at the beginning of college, in activities meant to facilitate socialization with same-cohort peers, and familiarization with a completely new environment, when everyone's stock of college friends is almost zero. What is perhaps more striking is that those friendships tend to last much longer beyond the window of opportunity, despite the subsequent full exposure to the whole cohort of first year students.

Table 3 also shows that homophily plays a statistically significant role in friendship

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<sup>25</sup>The interpretation of the coefficient on differences in tuition fees, themselves a function of family income bracket, relies on the tuition fee scale from zero (i.e., a full scholarship that a fifth of each cohort receives) to full tuition of 10,000 euros.

formation, notably along the dimensions of political opinions, gender, background and origin (such as département and region of high school, or admission category), interest (the type of high school major), and family income (proxied by the level of tuition). However, its role is rather limited, as shown by the very small size of all coefficients on predetermined characteristics. The two variables  $IG_{ij}$  and  $TG_{ij}$  combined explain about 20% of the variation in friendship formation, while all the variables based on predetermined characteristics only add 1% to the R-squared. The inclusion of predetermined covariates does not alter the coefficient of  $IG_{ij}$ .

Overall, the results in Table 3 clearly confirms the relevance of the instrumental variable  $IG_{ij}$ . They also highlight the importance of “chance encounters” among similar individuals during a window of opportunity in formation of friendship links, and a much weaker role of homophily based on predetermined observable characteristics. This finding can be useful in calibrating network-formation models such as Jackson and Rogers (2007).

## 4.2 Friendship effect on opinion differences

In columns 1 and 2 of Table 4, OLS regressions of differences in political opinions on friendship, controlling for pre-Sciences Po differences and eventually the other covariates, show that on average pairs of friends have lower differences in political opinion. The magnitude of the coefficient of friendship is rather stable, ranging from 0.10 to 0.13, or 5-6% of the mean difference 1.93, and 7-8% of the standard deviation 1.47 (Table 1 Panel E), and statistically significant at 5%. The reduction of the coefficient size from 0.13 to 0.10 after column 2’s inclusion of control variables suggests that there is some homophily bias due to the omission of observable covariates. It is thus important to address the potential homophily bias due to unobservables.

*[Insert Table 4 here]*

Columns 3 and 4 present the estimated LATE of friendship on differences in political opinions (controlling for initial differences), using the IV strategy described in Section 3.1. The estimate varies from  $-0.49$  to  $-0.54$ , both statistically significant at 5%. They imply that the causal effect of friendship on opinion differences among compliers, over the course of the first 6 months at Sciences Po, is about half a point on a 1-to-10 scale, which approximates a quarter of the mean difference, and a third of the standard deviation of the differences. Given the usual caveats of extrapolation, a linear extrapolation to

24 months spent at Sciences Po<sup>26</sup> implies an effect equivalent to the average pairwise difference.<sup>27</sup>

The results in Table 4 raise three remarks. First, it is useful to consider the case of an econometrician who does not observe friendship data, and could only regress differences in political opinions to peer-group membership, such as that in the tutorial group. In that empirical exercise, shown in column 5, the coefficient of same-tutorial-group membership  $TG_{ij}$  is only -0.01 and not statistically significant at conventional levels.<sup>28</sup> It represents the “peer effect” often discussed in the literature (Sacerdote, 2011, 2014), which is a weighted average of effects among pairs of friends and pairs of non-friends. The comparison between peer effect and friendship effect resonates Carrell et al.’s (2013) finding that most of its peer-group effect can be attributed to an effect among friendships endogenously chosen by individuals.

Second, the IV estimates are four times larger in absolute value than the OLS estimates. This difference is not due to a correction of the homophily bias (which alone would have predicted a smaller IV estimate), but rather to the LATE interpretation. In our context, compliers are the ones that befriend very easily if exposed to each other during the integration week. We may expect that they have strong similarities along some unobservable dimension, which correlate with the capacity to have strong influence on each other, and the latter could result in a much stronger effect than the average effect among all pairs. When this phenomenon dominates the homophily bias, the IV coefficient will be larger than the OLS coefficient.<sup>29</sup>

Third, a “back of the envelope” calculation shows how much friendship links have contributed to the reduction of the total pairwise differences in political opinions in the sample from before Sciences Po until the survey. Per dyad, there is on average 0.0170 friendships, so an effect of -0.538 can explain  $\frac{0.0538 \times 0.0170}{2.2 - 1.926} = 3.34\%$  of the change in total pairwise differences (see Table 1 Panels C and D). This modest proportion is due to the very low frequency of direct friendships in the dyadic sample. In section 6 we will

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<sup>26</sup>The undergraduate program at Sciences Po includes two years at its campus and one exchange year abroad.

<sup>27</sup>Appendix Table A5 shows results from an alternative specification that uses the same IV to estimate friendship’s LATE on the change in pairwise differences in opinions, and not controlling for initial differences. The effect is larger, at around 0.9 points on the scale from 1 to 10.

<sup>28</sup>Without covariates, the coefficient is -0.06, with a p-value of 0.007.

<sup>29</sup>Appendix Table A6 restricts the sample to different types of pairs based on their initial political views, such as Left-Left, Center-Right, etc. The full political spectrum is partitioned into the Extreme Left, the Left, the Center, the Right, and the Extreme Right, corresponding respectively to answer sets {1, 2}, {3, 4}, {5, 6}, {7, 8}, and {9, 10}. The friendship effect is present across the board, although usually with a low level of precision in each case, except among pairs of Extreme Right students.

re-examine this accounting exercise with the effect of second-degree friendships.

### 4.3 Friendship effect on association activities

It is important to link students' beliefs to their behaviors. In this context, the most natural behavior following changes in political opinions is participation in political organizations, including students' associations with certain political inclinations, and political parties. Table 5 shows results on the effect of friendship on the indicator whether a pair of students enroll in the same organization.<sup>30</sup>

*[Insert Table 5 here]*

In Panel A, while we do not see a significant effect of friendship in the indicator of joining any association (column 1), students do follow their friends in joining exactly the same association. The effect is about 0.18 among students who do join some organization (column 2), and 0.08 in the full sample (column 3). On the other hand, columns 4 and 5 show no significant effect on enrollment in political parties. Indeed, almost roughly half of the small number of students who are registered with a political party is explained by their pre-Sciences Po registration (column 4), leaving little variation of this outcome that can be explained by friendship.

Table 5 Panel B focuses on indicators of students joining associations of a certain type, in order to understand friends' motivation in joining the same association. The effect of friendship is concentrated on associations that have a political inclination and those related to one's identity. Column 2 groups associations that are strongly linked to political parties and/or motivated by regular political activities.<sup>31</sup> Column 3 considers all associations with some political motivation, including the ones considered in column 2, as well as others with focus on a political issue, but without a particular political leaning. The effect is statistically significant at 10% in both columns 2 and 3, that is, a friendship link significantly increases the possibility that both students join a politically-leaning association. The difference in the effect size between the two columns may be due in part to the fact that there are considerably fewer associations considered in column

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<sup>30</sup>Unfortunately, we do not observe the intensity of participation, and could only consider the extensive margin. Another shortcoming is that formal political party enrollment is still very rare among first-year students. Also, most of them have not reached voting age in previous political elections.

<sup>31</sup>They include student unions, notably the famous UNEF, known for its rather radical agenda and organization of most of the students' loudest manifestations on campus, even though it is officially declared as apolitical. While a student at Sciences Po, the former French president François Hollande was also president of UNEF.

2. Column 4 gathers all associations pertaining to certain aspect of a student’s identity, such as nationality, region of origin, religion, and ethnicity. The estimate is strongly positive, but not significant, which could reflect great heterogeneity in the activities and the appeal of those associations. Other types of associations such as related to sports (column 1) or policy issues (column 5) do not exhibit a friendship effect.

The similar participation in political associations among friends may be further decomposed into two mechanisms: (i) friends influence each other’s intensity of interest in politics, which brings both to politically-leaning associations, and (ii) friends prefer to have more interactions in (the same) political associations. In columns 6 and 7 we attempt to explore the first mechanism by considering the effect of friendship on both students’ joining some political associations (column 6), and especially on their joining some *different* political associations (column 7). Both estimates are close to zero, suggesting that friendship does not drive students’ interest in politics, and students are no more interested in any political associations other than their friends’. Friendship thus has a very targeted effect on participation in associations.

Taken together, these results are important in showing an effect of friendship on actual behaviors, beyond the one on self-reported political opinion. Interestingly, while friendship leads friends to further exposure within an association, in this context it only does so for politically-motivated associations.

## 5 Main drivers of the friendship effect

### 5.1 Direction of opinion changes

In this section, we investigate the mechanisms that drive our main result, first by considering the different types of dyadic changes in opinions from before students’ entrance into Sciences Po (August 2013) to the moment of the survey (March 2014). First, we classify the changes in a pair’s opinions into three major categories: Opinions that move towards each other (convergence), opinions that move away from each other (divergence), and opinions that move in the same direction (co-movement). In each category, we further define the possibilities of a “strong” change in which both opinions move, a “single” change in which only one opinion changes while the other remains fixed, and a “weak” case that groups the strong change, the single change, and the possibility that both re-

main fixed.<sup>32</sup> The categories are not mutually exclusive, e.g., the case of one fixed opinion and the other moving away would be branded as both divergence and co-movement. Table 6 shows estimates of the effect of friendship on the incidence of each category, using the IV strategy set out in section 3.1.

[Insert Table 6 here]

The estimates of the effect of friendship on the incidences of fixed opinions, weak convergence, single convergence, and strong convergence (columns 1 to 4) are not statistically significant, and of rather modest magnitude. On the other hand, columns 5 to 7 show strong evidence that friendship reduces the incidences of weak and strong divergence. Friendship reduces the possibility of divergence by 12 to 17 percentage points, a large magnitude compared with the mean probability of divergence of . We also find evidence of friendship inducing students to co-move in the same direction, and doing so while reducing their differences (columns 8 and 9).<sup>33</sup>

We draw two major remarks from this subsection. First, the lack of result on convergence shows that friendship does not necessarily create echo chambers or filter bubbles, in terms of compressing the diversity of opinions. Yet the strong effect of discouragement on divergence suggests that friends do keep each other from deviating away to the extremes.

Second, it is important to consider the nonlinearity of the effect of friendship on each other's opinion, as the effect can be dependent on the direction of opinion change. This finding questions the typical assumption of homogenous, linear effects of direct links on one's beliefs, as modeled and estimated in the theoretical and empirical literatures on non-Bayesian learning in networks (Möbius and Rosenblat, 2014). Examples include theories using average-based belief updating processes (the term coined by Golub and Jackson 2012, for a generalized definition of DeGroot 1974's belief updating), or empirical

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<sup>32</sup>Denoting  $\Delta Y_i$  as  $i$ 's signed change in opinion from  $t = 0$  (before Sciences Po) to  $t = 1$  (survey time), those concepts are formally defined as follows. The pair  $(i, j)$  maintain fixed opinions iff  $\Delta Y_i = \Delta Y_j = 0$ . They experience a strong convergence iff  $\Delta Y_i(Y_{j0} - Y_{i0}) > 0$  &  $\Delta Y_j(Y_{i0} - Y_{j0}) > 0$ , a single convergence iff  $(\Delta Y_j = 0$  &  $\Delta Y_i(Y_{j0} - Y_{i0}) > 0)$  or  $(\Delta Y_i = 0$  &  $\Delta Y_j(Y_{i0} - Y_{j0}) > 0)$ , and a weak convergence iff  $\Delta Y_i(Y_{j0} - Y_{i0}) \geq 0$  &  $\Delta Y_j(Y_{i0} - Y_{j0}) \geq 0$ . Similarly, strong divergence means  $\Delta Y_i(Y_{j0} - Y_{i0}) < 0$  &  $\Delta Y_j(Y_{i0} - Y_{j0}) < 0$ , single divergence  $(\Delta Y_j = 0$  &  $\Delta Y_i(Y_{j0} - Y_{i0}) < 0)$  or  $(\Delta Y_i = 0$  &  $\Delta Y_j(Y_{i0} - Y_{j0}) < 0)$ , and weak divergence  $\Delta Y_i(Y_{j0} - Y_{i0}) \leq 0$  &  $\Delta Y_j(Y_{i0} - Y_{j0}) \leq 0$ . Co-movement is defined as  $\Delta Y_i \Delta Y_j \geq 0$ , and converging co-movement as  $\Delta Y_i \Delta Y_j \geq 0$  &  $|Y_{i0} - Y_{j0}| \geq |Y_{i1} - Y_{j1}|$ .

<sup>33</sup>Table 6's approach focuses on the extensive margin of each category of movement, thus alleviates the concern of recall bias due to the retrospective nature of students' answers on political opinion before joining Sciences Po. Indeed, even if those answers can be biased towards students' opinions, this bias does not affect results on the weak categories, such as friendship's reduction effect on divergence. We will return to this issue in section ??.



estimations of peer effect in networks such as [Calvó-Armengol et al. \(2009\)](#), or [Bramoullé et al. \(2009\)](#).

## 5.2 Friendship effect among similar students

While our estimate of the friendship effect is free of the homophily bias, the homophily property itself is useful to understand the mechanism behind the friendship effect, one that we term the “homophily-enforced channel”. To illustrate the role of homophily, consider two pairs of students: the first pair, François (F) and Ségolène (S), started Sciences Po with very similar characteristics on the key dimension in our analysis, namely political opinions, whereas the second pair, Michel (M) and Dominique (D), started Sciences Po with very different political views. Given homophily, the unconditional probability for F and S to become friends is higher than that of M and D. However, conditional on both pairs becoming friends, homophily implies that it is likely that M and D have other, non-political characteristics in common, e.g., their interest in tennis. Thence, throughout their time at Sciences Po, each pair’s friendship conducts to more interaction on the dimension that helps them become friends, thus reinforces the corresponding similarity, namely, politics between F and S, and tennis between M and D.

Friendship thus has very different consequences on friends’ similarity depending on the friends’ initial dimension of homophily. Friendship should have a strong effect on the political similarity among pairs that started out with similar political views, but a weak or inexistent effect on political views of pairs that started out with dissimilar political views. This implication is tested on different subsamples based on initial differences in political opinions, and reported in Table 7.

*[Insert Table 7 here]*

Columns 2 to 6 report the benchmark IV regression coefficient of friendship on subsamples that condition pre-Sciences Po differences in political opinions to be within the indicated ranges, namely equal to 0, 1, 2, and greater and less than 2 (recall that the average of dyadic differences is about 1.9). The friendship effect on friends’ difference in political opinion is mostly powerful among pairs with an initial difference in political views of less than 2: the coefficient in column 6 is about 50% larger than the benchmark coefficient in Table 4. As initial differences increase beyond 2, the effect fades out with smaller and statistically insignificant coefficients. This pattern is confirmed in column 1’s full-sample specification that includes a saturated model in friendship and initial differ-

ences in political opinions, using both the same-integration group variable  $IG_{ij}$  as well as its interaction with initial differences as instruments. The coefficient on the interaction between friendship and initial differences is large and positive, but noisily estimated.<sup>34</sup>

As those results highlight the role of pairs with a small difference in pre-Sciences Po political opinions, we further explore how these pairs reinforce their relationship if they become friends. The second commonest type of environment that fosters interactions among Sciences Po students, as explained in section 2, is association activities. We thus revisit the analysis by association types in Table 5 Panel B, now restricted to the subsample of pairs with a pre-Sciences Po difference in political opinion less than 2.<sup>35</sup> The results in columns 2 to 4 show a very strong effect of friendship on a pair’s participation in the same type of associations, but only among those related to politics and personal identity (such as based on national and regional origins). Other types of associations, be it sports or practical policy issues, enjoy no such concentration of friends (columns 1 and 5). Similar to Table 5 Panel B, friendship only increases a pair’s participation in the same association, but not their interest in participating in different associations of the same type (columns 6 and 7).

*[Insert Table 8 here]*

Taken together, the findings from Tables 7 and 8 are consistent with the homophily-enforced channel. By homophily, students who form new friendships because of their chance encounter (i.e., in an integration group, in this paper’s context) may do so according to one or a few areas in which they share common interest. One important area can be politics: certain pairs of students form friendships because of their similarity in political opinions. Others, however, may form friendships along other dimensions, and can become friends despite large differences in political opinion. Over time, interactions between pairs are shaped along the lines of common interests, so friends with similar political opinions tend to often discuss politics and join the same politically-inclined associations, while friends with different political opinions may strengthen their relationship through other dimensions on which they are more similar. In consequence, friends who started out with similar political opinions continue to influence each other’s political

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<sup>34</sup>Its lack of statistical significance can also reflect the nonlinear nature of the relationship, as well as the large amount of noise among pairs with large initial differences.

<sup>35</sup>For completeness, the analysis similar to Table 5 Panel A on this subsample, as well as all of Table 5’s analysis on the complementary subsample of all pairs with pre-Sciences Po difference in political opinion of at least 2, are presented in Appendix Table A7.

opinions, while friends who started out with large differences in opinions do not exert much influence on each other’s political opinions.

This mechanism echoes [Golub and Jackson \(2012\)](#) analysis on homophily and the speed of convergence in beliefs, but with the introduction of an endogenous selection of the dimension of interaction based on homophilous preferences. Since our newly discovered empirical facts imply a rather nonlinear mechanism of diffusion of beliefs, notably in the asymmetry between converging and diverging, it would be interesting to reconsider their results in light of those facts.

### 5.3 Polarization and extremism among similar students

We further investigate the homophily-enforced mechanism of friendship on the directions of opinion changes. Table 9 repeats the regressions in Table 8, with the outcome variable indicating whether the pair diverges strongly.<sup>36</sup> Friendship between of pair of students with similar initial political opinions has a very strong and statistically significant effect in reducing the possibility of both diverging in opposite directions. The overall effect of friendship on divergence seems to be dominated by similar pairs, while the pairs with large differences in pre-Sciences Po political opinions remain as likely to diverge even if they become friends.

*[Insert Table 9 here]*

One natural corollary of the friendship effect on divergence is that friendship reduces the incidence of students with extremist views. Table 10 tests this prediction by applying our IV strategy to study the effect of friendship on the indicator of at least one student with an extreme political opinion, defined as an opinion score either in  $\{1, 2\}$  (extreme left) or  $\{9, 10\}$  (extreme right).<sup>37</sup> As in the previous table, we further condition the sample to those whose pre-Sciences Po political opinions are rather similar. Column 1 shows that a friendship link reduces the incidence of extremism after 6 months at Sciences Po by 15 percentage points, an estimate statistically significant at 5%. When we condition the sample on other dimensions of homophily that can be more easily measured, including same gender (column 2), same type of admission procedure (which mostly separates

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<sup>36</sup>That is, the changes in opinions  $\Delta Y_i, \Delta Y_j$  satisfy  $\Delta Y_i(Y_{j0} - Y_{i0}) < 0$  &  $\Delta Y_j(Y_{i0} - Y_{j0}) < 0$ . Similar cases in which the outcome variable is the indicator of single or weak divergence, or strong, single, or weak convergence, or comovements, are presented in Appendix Table A8.

<sup>37</sup>As usually found in French universities, there exist few extreme right views. The number of extreme left views is much larger, as can be seen in Figure 1.

out the affirmative action students from the rest, shown in column 3), and both being moderate (defined as an opinion score in  $\{3, 8\}$ , shown in column 4), the results remain important and statistically significant throughout all subsamples.

[Insert Table 10 here]

Given the estimated friendship effect and the frequency of friendship of 0.017, friendship among similar students has thus contributed 9% of the reduction of 2.7 percentage points, from 19.5% to 16.8%, in the proportion of pairs with at least one extreme view.<sup>38</sup>

## 6 Friendship effect and network characteristics

After having focused on the channels of the friendship effect in the previous section, we now turn to its heterogeneous magnitudes based on the network structure. Subsection 5.1 has already shown different friendship effects on divergence versus convergence, which disputes the standard assumption of linear homogenous friendship effects across all types of links in DeGroot-like averaged-based belief updating processes (Golub and Jackson 2012) typically used to model non-Bayesian learning (Möbius and Rosenblat, 2014). In this section we examine this assumption across network characteristics.

We first consider the intensity of friendship, surveyed on a scale of 1 (mere friendship) to 4 (very close friends). To highlight the difference between each level  $x$  and its lower level  $x - 1$  ( $x \in \{1, \dots, 4\}$ , with level 0 meaning the pair are not friends), we create a binary variable  $D^x$  equal to 1 if the friendship intensity is  $x$  or stronger, and 0 otherwise (thus any variation of intensity above  $x$  or below  $x - 1$  is collapsed to a single level), and use our IV strategy with  $D_{ij}^x$  as the treatment variable instead of friendship  $Link_{ij}$ .<sup>39</sup>

Columns 2 to 5 of Table 11 report the results of those specifications, for different levels of intensity from  $x = 4$  down to  $x = 1$ . At  $x = 1$ , we are back to the benchmark specification in Table 4, in which all intensity levels are considered the same. The friendship effect is not homogenous when one passes from one level of intensity to the next, but

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<sup>38</sup>As the rest of our analysis, this simple calculation is based on the dyadic sample of student pairs, not the sample of individuals. Unfortunately, there is no simple way to directly map dyadic results to a monadic interpretation.

<sup>39</sup>That is, we use the same integration group membership  $IG_{ij}$  as instrument for each new treatment variable  $D_{ij}^x$  in a separate specification, to estimate the LATE of improving one degree of friendship intensity at each level. Similarly to the arguments in section 3.1, in this context the instrument still satisfies all conditions for a causal LATE interpretation. The only potential concern is whether the variable  $IG_{ij}$  is also a strong instrument for  $D_{ij}^x$  for any level of friendship intensity  $x$ , a condition that Table 11 duly tests and confirms.

ranges from -0.558 for the lowest level of friendship to up to -3.101 for very close friends (all estimates are statistically significant at 5%, although estimates at higher intensity levels are less precise). This effect could be inherently due to the strength of friendship, or to the possibility that friends with similar political opinions tend to be close friends, and based on Table 8 they tend to experience a stronger friendship effect.

*[Insert Table 11 here]*

In Table 12, we further differentiate pairwise relationships in categories based on social distance, i.e., the shortest-path distance between any pair of students in their social network. Column 1 reproduces the benchmark result from Table 4's column 4 to highlight the causal comparison between direct friends (social distance 1) and non-direct friends (social distance greater than 1). In column 2, we consider the effect of increasing a pair's social distance on their difference in political opinion. Using integration group membership as instrument for social distance, we can interpret the estimated effect as an Average Causal Response, a weighted average over causal effects among all pairs that comply to the IV to move closer in social distance ([Angrist and Imbens, 1995](#); [Angrist and Pischke, 2008](#)). The magnitude of the effect in column 2 is a lot smaller than the corresponding benchmark coefficient, suggesting that the effect is not always strong for all values of social distance (now a positive coefficient means a shorter social distance leads to closer opinions.)

In this direction, we cut the sample into subsamples to compare between pairs of consecutive social distances: social distance 1 versus 2 in column 3, social distance 2 versus 3 in column 4, and social distance 3 versus farther distances in column 5. In each column, we can always use the same integration group membership as instrument, subject to a test of instrument strength. We find a strong and precisely estimation effect on political opinion when social distance shrinks from 2 to 1, i.e., when indirect friends become direct friends. The magnitude of the convergence effect of this treatment is not too far from the benchmark result: 0.38 versus 0.54 points on a scale from 1 to 10. Beyond direct friends, we find some evidence of a similar-sized effect of reducing social distance from 3 to 2, although the estimate remains rather imprecise, but not any statistically significant result above social distance 3.<sup>40</sup>

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<sup>40</sup>This is similar to [Leider et al.'s \(2009\)](#) description that from a social preference perspective, indirect friends of distance 3 are not distinguishable from strangers.

[Insert Table 12 here]

Similar to section 4.2, a simple calculation shows how much of the total change in pairwise differences in political opinions can be attributed to direct friendships and second-degree friendships (friends of friends). Using estimates from columns 3 and 4 in Table 12, and the frequencies of direct and second-degree friendships at 0.0170 and 0.0990, the explained proportion is  $\frac{(0.375+0.436) \times 0.0170 + 0.436 \times 0.0990}{2.2 - 1.926} = 20.8\%$ . This high figure should be taken with caution, however, given the low precision of the estimate 0.436.

Next, we study whether students' positions in the social network, notably in terms of *network centrality*, may matter to the friendship effect on differences in political opinions. This question is related to the line of thought that centrality in social networks also conveys information about a person's influence and charisma. If that is the case, the friendship effect should be much larger for pairs of a highly-central student (a "star") and a non-central student (a "non-star") than pairs of two non-central students or pairs of two highly-central students. Table 13 Panel A explores this idea using the measure of *eigenvector centrality* (see Table 1, Panel A), according to which a student's centrality measure is a linear aggregate of his friends' centrality. The three columns consider respectively the subsamples of pairs of two stars (column 1), of one star and one non-star (column 2), and of two non-stars (column 3), for which a student is considered highly-central (a star) if his centrality measure is in the highest quartile of its distribution. The friendship effect is not present among pairs of stars, with a positive, statistically insignificant estimate. Among the other two subsamples, the effect is rather strong and statistically significant at 10%. Those results are further confirmed in Table 11 Panel B, in which we show the friendship effect for pairs of students belonging to different quartiles of centrality. While there is a considerable amount of noise, the overall message is that individuals in quartiles 1 to 3 are generally more malleable to their friends' influence. Overall, the evidence is consistent with the view that network stars are hardly influenceable, whereas non-stars tend to be more influenceable. However, network stars do not necessarily wield stronger influence than non-stars.

[Insert Table 13 here]

## 7 Concluding remarks

In this paper, we investigate empirically how newly-formed friendships through a one-week exposure among new students at the entry of college may shape friends' political beliefs, in the context of students at a French elite school well-known as the most prominent alma mater of French politicians. We find that within the first 6 months of college, friendship causes a substantial reduction in the gap between friends' political opinions by around 0.5 points (over a scale from 1 to 10 in political opinions), equivalent to a quarter of the average gap and a third of its standard deviation. Friendship also causes friends' participation in the same politically-inclined associations. The effect of friendship works through a discouragement of divergence and an encouragement of co-movement of opinions, but not an encouragement of convergence. Consequently, friendship tends to reduce extremist views among students, without forcing the same views among friends.

The results are consistent with what we term as a “homophily-enforced” mechanism of friendship effect. When students who are similar on the dimension of political opinions become friends, they continue to interact on related topics, as shown by their decisions to participate in the same politically-inclined associations (and not other types of associations). Such continual interactions, as enforced by homophily, are the factor that produces the strong effect of friendship among students with high similarity in political opinions before joining Sciences Po. In consequence, those pairs of students are strongly discouraged from diverging, and consequently are less likely to become extremes. In contrast, friends who were politically dissimilar before Sciences Po would not follow this path, hence friendship has little effect on their political opinions.

Another important aspect of our results is the nonlinearity and heterogeneity of the friendship effect on political opinions. It is stronger for stronger friendship and closer social distance. It is likely asymmetric between network stars and non-stars, defined by network eigenvector centrality, in that stars are much less likely to be influenced. Those findings will be important in shaping how we model the process of belief formation and transmission in networks.

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Table 1 - Panel A: Quality of the Survey

	(1)	(2)
	Full Sample	Benchmark Sample
Number of reported friends	8.234 (2.522)	8.613 (1.984)
Probability of reciprocal friend	0.461 (0.499)	0.479 (0.500)
Correct answer: meeting	0.800 (0.400)	0.815 (0.389)
Correct answer : time spent	0.483 (0.500)	0.497 (0.501)
Correct answer : activity	0.568 (0.496)	0.587 (0.493)
Correct answer : strength of the relationship	0.532 (0.499)	0.532 (0.500)

Notes: Summary statistics (1) refer to the full sample, where full sample is defined as the set of all pairs for which both members named at least one friend or stated that they have no friends in Sciences Po. Summary statistics (2) refer to the benchmark sample as described in Table A1.

Table 1 - Panel B: "OR" Network statistics

Mean of degree per individual	8.8625
Variance of degree per individual	18.4842
Median of degree per individual	10
Maximum of degree per individual	21
Minimum of degree per individual	0
Diameter of the network	9
Average path length	3.7008
Overall clustering coefficient	0.241
Average clustering coefficient	0.271
Mean eigenvector centrality	0.0361
Standard deviation of eigenvector centrality	0.0200

Notes: Summary statistics are computed on the full sample.

Table 1 - Panel C: Dyadic Links and Groups

Variable	(1)			(2)		
	Full Sample			Benchmark Sample		
	Mean	Standard deviation	Obs.	Mean	Standard deviation	Obs.
Friendship	0.0160	(0.1240)	147,153	0.0170	(0.1300)	54,615
2nd Order Links	0.0930	(0.2900)	147,153	0.0990	(0.2990)	54,615
3rd Order Links	0.3800	(0.4850)	147,153	0.4020	(0.4900)	54,615
Mere relationship (strength 1)	0.0014	(0.0382)	147,153	0.0017	(0.0421)	54,615
Friendship link (strength 2)	0.0063	(0.0791)	147,153	0.0068	(0.082)	54,615
Close friendship (strength 3)	0.0041	(0.0642)	147,153	0.0045	(0.067)	54,615
Very close friendship (strength 4)	0.0035	(0.0593)	147,153	0.0040	(0.0632)	54,615
Same Integration Group	0.0160	(0.1280)	147,153	0.0180	(0.1330)	54,615
Same Tutorial Group	0.0230	(0.1490)	147,153	0.0230	(0.1500)	54,615

Notes: Summary statistics (1) refer to the full dyadic sample, where full sample is defined as the set of all pairs for which both members named at least one friend or stated that they have no friends in Sciences Po. Summary statistics (2) refer to the benchmark dyadic sample as described in Table A1.

Table 1 - Panel D: Monadic Dependent Variables

Variable	(1)			(2)		
	Full Sample			Benchmark Sample		
	Mean	Standard deviation	Obs.	Mean	Standard deviation	Obs.
Pre-Sciences Po Political Opinion (in 2013) (1-10)	5.108	(1.958)	463	5.148	(1.934)	331
Political Opinion in 2014 (1-10)	5.044	(1.755)	472	5.091	(1.712)	331
Political Opinion in 2014 as recalled in 2015	4.913	(1.65)	287	4.941	(1.642)	331
Political Opinion in 2015	4.853	(1.807)	285	4.818	(1.746)	331
Enrollment in a Political Party in 2014 (yes / no)	0.104	(0.303)	521	0.121	(0.326)	331
Enrollment in a Political Party in 2013 (yes / no)	0.067	(0.249)	519	0.076	(0.265)	331
Enrollment in an Association in 2014	0.597	(0.491)	499	0.642	(0.48)	330

Notes: Summary statistics (1) refer to the full individual sample, where the full sample is made of all the individual observations for which the variable described is not missing. Summary statistics (2) refer to the benchmark sample, where the benchmark sample is defined as the individual sample containing all the individuals that are present in our benchmark dyadic sample as described in Table A1.

Table 1 - Panel E: Dyadic Dependent Variables

Variable	(1) Full Sample			(2) Benchmark Sample		
	Mean	Standard deviation	Obs.	Mean	Standard deviation	Obs.
Difference in Political Opinion in 2014	1.932	(1.467)	105,111	1.926	(1.468)	54,615
Initial difference in Political Opinion (2013)	2.211	(1.631)	101,025	2.2	(1.623)	54,615
Difference in Political Opinion in 2015	2.014	(1.538)	27,027	1.94	(1.496)	15,920
Difference in Political Opinion in 2014 (as recalled in 2015)	27,729	(1.424)	126,756	1.798	(1.412)	15,920
Membership in Some Political Party in 2014	0.815	(0.388)	127,260	0.785	(0.411)	53,628
Membership in Some Political Party in 2013	0.874	(0.332)	126,756	0.858	(0.349)	52,975
Membership in the Same Political Party in 2014	0.827	(0.379)	1,326	0.8	(0.4)	780
Membership in Some Association	0.479	(0.4995)	114,960	0.461	(0.498)	47,895
Membership in the Same Association	0.915	(0.279)	52,003	0.903	(0.296)	24,310

Notes: Summary statistics (1) refer to the full dyadic sample, where full sample is defined as the set of all pairs for which both members named at least one friend or stated that they have no friends in Sciences Po. Summary statistics (2) refer to the benchmark dyadic sample as described in Table A1.

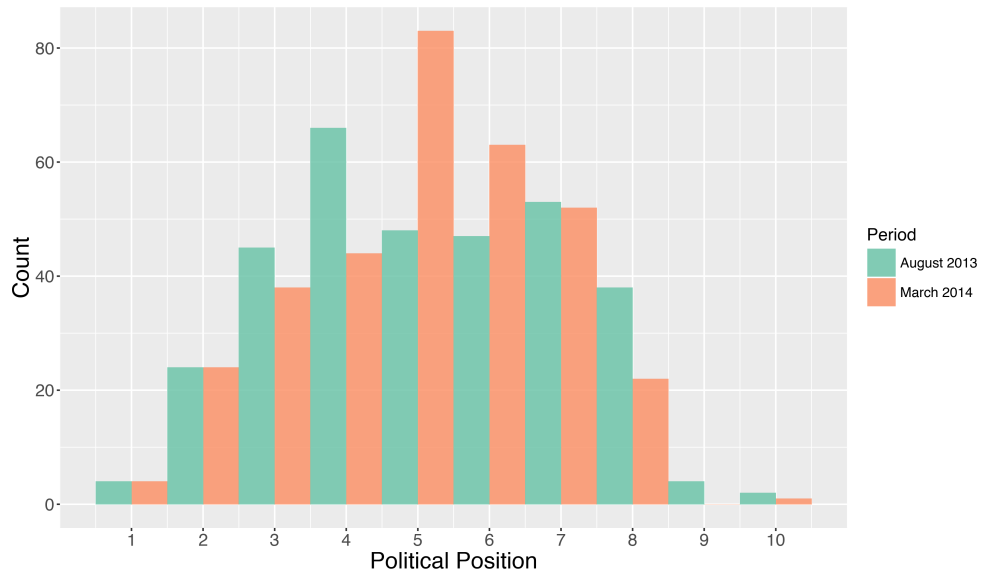


Figure 1: Distributions of Individual Political Opinion

Table 2 - Balance Test of Integration Group

Dependent Variable:	Same Integration Group
Same Gender	0.000673 (0.00148)
Same Female	-0.00194 (0.00135)
Same Nationality	0.00622 (0.00449)
Same Mixed	-0.00206 (0.00421)
French Nationality	
Same Admission	0.00137 (0.00116)
Same Priority	0.00182 (0.00697)
Admission	
Same Department	0.00299 (0.00420)
of High School	
Same Region	0.00170 (0.00156)
of High School	
Same High	-0.00203*
School Major	(0.00105)
Diff. in	-3.18e-07
Tuition Fees	(2.35e-07)
Same No Fees	-0.00138 (0.00115)
Same Parents	0.00103 (0.00130)
Profession	
Same ZIP Code	-0.000761 (0.00337)
Same Program	0.00270** (0.00121)
Observations	54,615
R-squared	0.001
F-stat	2.957

Notes: F-stats are for the joint significance of the variables included in the model. Standard errors in brackets are two-way clustered by individual 1's group and by individual 2's group.

Table 3: Same Group Membership and Friendship Formation (First Stage)

Dependent Variable:	Friendship		
	(1)	(2)	(3)
Same Integration Group	0.166*** (0.0154)	0.165*** (0.0153)	-
Same Tutorial Group	-	-	0.355*** (0.0208)
Initial Diff. in Political Opinion (August 2013)	-	-0.000861** (0.000431)	-0.000760* (0.000392)
Same Gender	-	0.0133*** (0.000968)	0.0116*** (0.00165)
Same Female	-	-0.0107*** (0.000171)	-0.00825*** (0.00179)
Same Nationality	-	0.00393 (0.00406)	-0.0120 (0.0150)
Same Mixed French Nationality	-	0.00127 (0.00528)	-0.0139 (0.0143)
Same Admission	-	0.00531*** (0.00155)	0.00499*** (0.00128)
Same Priority Admission	-	-0.00431 (0.00750)	0.00215 (0.00622)
Same Département of High School	-	0.0112*** (0.00340)	0.0117*** (0.00371)
Same Region of High School	-	0.00130 (0.00168)	0.00249* (0.00147)
Same High School Major	-	0.00558*** (0.00199)	0.00348*** (0.000969)
Diff. in Tuition Fees	-	-6.03e-07* (3.10e-07)	-4.95e-07** (2.19e-07)
Same No Fees	-	0.00117 (0.00137)	0.00132 (0.00128)
Same Parents Profession	-	0.00123 (0.00124)	0.00126 (0.00101)
Same ZIP Code	-	0.0150*** (0.00419)	0.0127*** (0.00489)
Same Program	-	0.0240*** (0.00336)	0.00825*** (0.00168)
Observations	54,615	54,615	
R-squared	0.029	0.041	0.175
Group Clustering	Yes	Yes	Yes
F-stat	114.2	15.84	87.79

Notes: Standard errors are two-way clustered by individual 1's group and by individual 2's group. F-stats are for the joint significance of the variables included in the model. The sample used is the benchmark sample described in the footnote to the Table A1.

Table 4: Friendship and Difference in Political Opinion

Dependent Variable:	Difference in Political Opinion (March 2014)				
	(1)	(2)	(3)	(4)	(5)
	OLS	OLS	IV	IV	OLS
Friendship	-0.127*** (0.0411)	-0.098** (0.0494)	-0.489** (0.2167)	-0.538** (0.2285)	-
Same Tutorial Group	-	-	-	-	-0.014 (0.0336)
Initial Diff. in Political Opinion (August 2013)	0.527*** (0.0257)	0.526*** (0.0252)	0.526*** (0.0258)	0.526*** (0.0253)	0.526*** (0.0252)
Observations	54,615	54,615	54,615	54,615	54,615
IV	No	No	Yes	Yes	Yes
Controls	No	Yes	No	Yes	Yes
Group Clustering	Yes	Yes	Yes	Yes	Yes
WeakIV test stat.	-	-	114.334	113.229	-

Notes: Standard errors are two-way clustered by individual 1's group and by individual 2's group. The sample used is the benchmark sample described in the footnote to Table A1. Controls include the following variables: Same Tutorial Group, Same Gender, Same Female, Same Nationality, Same Mixed French Nationality, Same Admission, Same Priority Admission, Same District of High School, Same Region of High School, Same High School Major, Diff. in Tuition Fees, Same No Fees, Same Parents Profession, Same ZIP Code, Same Program. Weak IV stat reports the Kleibergen-Paap cluster-robust statistic, distributed as a Chi-squared under the null hypothesis of weak identification.

Table 5 - Panel A: Friendship Effect on Political and Associative Activities

Dependent Variables:	Membership in Some Associations	Conditional Membership in Same Association*	Membership in Same Association	Membership in Some Political Party	Conditional Membership in Same Political Party*
	(1)	(2)	(3)	(4)	(5)
Friendship	-0.041 (0.1157)	0.178* (0.0931)	0.076* (0.0423)	0.035 (0.0651)	-0.015 (0.3197)
Both Pre-Sciences Po Party Membership	-	-	-	0.469*** (0.0735)	-
Observations	47,895	24,310	54,615	52,650	780
IV	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes
Double Group Clust.	Yes	Yes	Yes	Yes	Yes
WeakIV test stat.	110.7	69.8	113.2	104.9	5.714

\* Conditional on both individuals being enrolled in some association/political party.

Notes: The dyadic dummy variables are equal to 1 if the characteristic is the same for the two individuals in the pair and 0 if the characteristic is not the same. Standard errors are two-way clustered by individual 1's group and by individual 2's group. The sample used is the benchmark sample described in the footnote to Table A1. Weak IV stat reports the Kleibergen-Paap cluster-robust statistic, distributed as a Chi-squared under the null hypothesis of weak identification.

Table 5 - Panel B: Friendship Effect on Different Association Types

Dependent Variable:	Membership in						
	Same Association					Associations of Same Type	Different Associations of Same Type
Type of Association:	Strictly Political or Student Union	Political	Related to One's Identity	Related to Policy Issues	Sports	Political	Political
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Friendship	0.0488* (0.0272)	0.133* (0.0715)	0.138 (0.0899)	0.00437 (0.0808)	0.0418 (0.1720)	0.00371 (0.0170)	-0.0111 (0.0210)
Observations	24,310	24,310	24,310	24,310	24,310	24,310	24,310
IV	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Double Group Clust.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
WeakIV test stat.	69.84	69.84	69.84	69.84	69.84	69.84	69.84

Notes: The dependent dummy variables are equal to 0 if the characteristic is the same for the two individuals in the pair and 1 if the characteristic is not the same. Standard errors are two-way clustered by individual 1's group and by individual 2's group. The sample used is the benchmark sample described in the footnote to Table A1. Weak IV stat reports the Kleibergen-Paap cluster-robust statistic, distributed as a Chi-squared under the null hypothesis of weak identification.



Table 6: Friendship Effect on Convergence, Divergence, and Co-movement

Dependent Variables:	Staying in Same Position	Weak Convergence	Single Convergence	Strong Convergence	Weak Divergence	Single Divergence	Strong Divergence	Moving in Same Direction	Moving in Same Converging Direction
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Friendship	0.0793 (0.0676)	0.0341 (0.0957)	0.0802 (0.0970)	-0.0466 (0.0848)	-0.164* (0.0843)	-0.0520 (0.0760)	-0.112*** (0.0314)	0.100* (0.0540)	0.125** (0.0529)
Initial Diff. in Political Opinion (August 2013)	-0.00528 (0.00378)	0.110*** (0.00672)	0.0598*** (0.00323)	0.0598*** (0.00656)	-0.0833*** (0.00256)	-0.0646*** (0.00288)	-0.0187*** (0.00200)	-0.0277*** (0.00600)	-0.0124** (0.00483)
Mean of Dependent Variable	0.156	0.456	0.289	0.15	0.227	0.188	0.038	0.183	0.145
Standard Deviation of Dependent Variable	0.3628	0.4981	0.4535	0.3571	0.4186	0.391	0.1919	0.3868	0.3524
Observations	54,615	46,901	49,636	46,901	54,615	54,615	54,615	54,615	54,615
IV	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Double Group Clust.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
WeakIV test stat.	113.2	112.7	107.3	112.7	113.2	113.2	113.2	113.2	113.2

Notes: Standard errors are two-way clustered by individual 1's group and by individual 2's group. The sample used is the benchmark sample described in the footnote to Table A1. Weak IV stat reports the Kleibergen-Paap cluster-robust statistic, distributed as a Chi-squared under the null hypothesis of weak identification.

Table 7: Friendship Effect and Initial Differences in Political Opinion

Dependent Variables:	Difference in Political Opinion (March 2014)					
Conditions	Difference in Initial Political Opinion:					
		=0	=1	=2	> 2	< 2
	(1)	(2)	(3)	(4)	(5)	(6)
Friendship	-0.978** (0.422)	-0.792*** (0.302)	-0.690** (0.292)	-0.404 (0.471)	-0.265 (0.407)	-0.732*** (0.231)
Friendship*Initial Diff. in Political Opinion	0.205 (0.174)	-	-	-	-	-
Initial Diff. in Political Opinion (August 2013)	0.522*** (0.0252)	-	-	-	0.715*** (0.0416)	0.140*** (0.0180)
Observations	54,615	7,714	14,235	11,644	21,022	21,949
IV	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Double Group Clust.	Yes	Yes	Yes	Yes	Yes	Yes
WeakIV test stat.	30.97	46.36	41.59	18.14	68.69	59.77

Notes: Standard errors are two-way clustered by individual 1's group and by individual 2's group. The sample used is the benchmark sample described in the footnote to Table A1. Weak IV stat reports the Kleibergen-Paap cluster-robust statistic, distributed as a Chi-squared under the null hypothesis of weak identification.

Table 8: Convergence on Associative Activities - Conditional on Similar Initial Opinion

d. Membership in							
Dependent Variable:	Same Association				Associations of Same Type		Different Associations of Same Type
Type of Association:	Strictly Political or Student Union	Political	Related to One's Identity	Related to Policy Issues	Sports	Political	Political
Condition:	Difference in Initial Political Opinion < 2						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Friendship	0.128** (0.0567)	0.244** (0.103)	0.426** (0.180)	0.180 (0.169)	0.041 (0.231)	0.0406 (0.0375)	-0.0357*** (0.0101)
Observations	9,727	9,727	9,727	9,727	9,727	9,727	9,727
IV	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Double Group Clust.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
WeakIV test stat.	36.26	36.26	36.26	36.26	36.26	36.26	36.26

Notes: The dependent dummy variables are equal to 0 if the characteristic is the same for the two individuals in the pair and 1 if the characteristic is not the same. Standard errors are two-way clustered by individual 1's group and by individual 2's group. The sample used is the benchmark sample described in the footnote to Table A1. Weak IV stat reports the Kleibergen-Paap cluster-robust statistic, distributed as a Chi-squared under the null hypothesis of weak identification.

Table 9: Strong Divergence and Initial Differences in Political Opinion

Dependent Variables:	Strong Divergence in Political Opinion					
Conditions	Difference in Initial Political Opinion:					
		=0	=1	=2	> 2	< 2
	(1)	(2)	(3)	(4)	(5)	(6)
Friendship	-0.248*** (0.0480)	-0.422*** (0.115)	-0.0737 (0.0455)	-0.0790 (0.0555)	-0.0214 (0.0341)	-0.193*** (0.0462)
Friendship*Initial Diff. in Political Opinion	0.0631*** (0.0118)	-	-	-	-	-
Initial Diff. in Political Opinion (August 2013)	-0.0197*** (0.00210)	-	-	-	-0.00516*** (0.00136)	-0.0808*** (0.00716)
Observations	54,615	7,714	14,235	11,644	21,022	21,949
IV	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Double Group Clust.	Yes	Yes	Yes	Yes	Yes	Yes
WeakIV test stat.	30.97	46.36	41.59	18.14	68.69	59.77

Notes: Standard errors are two-way clustered by individual 1's group and by individual 2's group. The sample used is the benchmark sample described in the footnote to Table A1. Weak IV stat reports the Kleibergen-Paap cluster-robust statistic, distributed as a Chi-squared under the null hypothesis of weak identification.

Table 10: Friendship Effect on Extremism

Dependent Variables:	At Least One Extremist in the Couple in March 2014			
Initial Conditions:	Initial Difference in Initial Political Opinion < 2			
	All	Same Gender	Same Admission Type	Both Moderate
	(1)	(2)	(3)	(4)
Friendship	-0.146** (0.0658)	-0.204** (0.102)	-0.193** (0.0904)	-0.123* (0.0652)
Observations	21,949	11,171	14,929	20,324
IV	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes
Double Group Clust.	Yes	Yes	Yes	Yes
WeakIV test stat.	59.74	42.63	73.30	62.51

Notes: Standard errors are two-way clustered by individual 1's group and by individual 2's group. The sample used is the benchmark sample described in the footnote to Table A1. Weak IV stat reports the Kleibergen-Paap cluster-robust statistic, distributed as a Chi-squared under the null hypothesis of weak identification.

Table 11: Friendship Effect by Friendship Intensity

Dependent Variable:	Difference in Political Opinion (March 2014)				
Grouped Intensity Levels:	I	-	-	-	-
	(1)	(2)	(3)	(4)	(5)
Friendship	-0.549** (0.224)	-	-	-	-
Very Close Friendship	-	-3.101** (1.312)	-	-	-
Close Friendship or Stronger	-	-	-1.324** (0.563)	-	-
Friendship Link or Stronger	-	-	-	-0.717** (0.296)	-
Mere Relationship or Stronger	-	-	-	-	-0.558** (0.238)
Initial Diff. in Political Opinion (August 2013)	0.526*** (0.0253)	0.525*** (0.0253)	0.525*** (0.0253)	0.525*** (0.0253)	0.526*** (0.0253)
Observations	54,556	54,615	54,615	54,615	54,615
IV	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes
Double Group Clust.	Yes	Yes	Yes	Yes	Yes
WeakIV test stat.	116.1	29.83	54.89	75.33	102.9

I - Only friends that did not know each other from before entering Sciences Po.

Notes: Standard errors are two-way clustered by individual 1's group and by individual 2's group. The sample used is the benchmark sample described in the footnote to Table A1. Weak IV stat reports the Kleibergen-Paap cluster-robust statistic, distributed as a Chi-squared under the null hypothesis of weak identification.

Table 12: Effect of Reduction of Social Distance on Difference in Political Opinion

Dependent Variable:	Difference in Political Opinion				
Condition:	-	-	Degree < 3	Degree $\in \{2, 3\}$	Degree > 2
	(1)	(2)	(3)	(4)	(5)
Friendship	-0.538** (0.228)	-	-	-	-
Shortest Path	-	0.151** (0.0624)	-	-	-
1st vs 2nd order only	-	-	0.375*** (0.120)	-	-
2nd vs 3rd order only	-	-	-	0.436* (0.240)	-
3rd vs more order only	-	-	-	-	3.945 (6.916)
Observations	54,615	54,615	6,369	27,359	48,246
IV	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes
Double Group Clust.	Yes	Yes	Yes	Yes	Yes
WeakIV test stat.	113.2	151.3	212	171.3	0.357
A.R. Wald test F-stat.	5.96	5.96	9.00	3.41	1.33

Notes: specification (1) - benchmark sample; specification (2) - benchmark sample; specification (3) - only pairs of individuals that are at most within two degrees of distance; specification (4) - only pairs of individuals that are between two and three degrees of distance; specification (5) - only pairs of individuals that are at three or more degrees of distance. Standard errors are two-way clustered by individual 1's group and by individual 2's group. The sample used is the benchmark sample described in the footnote to Table A1. Weak IV stat reports the Kleibergen-Paap cluster-robust statistic, distributed as a Chi-squared under the null hypothesis of weak identification.

Table 13 - Panel A: Friendship Effect and Network Centrality

Dependent Variable:	Difference in Political Opinion (March 2014)		
Condition:	See Legend in the Notes		
	(1)	(2)	(3)
Friendship	0.141 (0.229)	-0.834* (0.467)	-0.764* (0.412)
Observations	3,240	20,250	31,125
IV	Yes	Yes	Yes
Controls	Yes	Yes	Yes
Double Group Clust.	Yes	Yes	Yes
WeakIV test stat.	161	58.83	57.02

Notes: specification (1) - two individuals in the top quartile of eigenvector centrality; specification (2) - one individual in the top quartile of eigenvector centrality; specification (3) - no individual in the top quartile of eigenvector centrality. Standard errors are two-way clustered by individual 1's group and by individual 2's group. The sample used is the benchmark sample described in the footnote to Table A1. Weak IV stat reports the Kleibergen-Paap cluster-robust statistic, distributed as a Chi-squared under the null hypothesis of weak identification.

Table 13 - Panel B: Friendship Effect and Network Centrality

Dependent Variable:		Difference in Political Opinion (March 2014)			
		Quartile of Eigenvector Centrality			
		1st	2nd	3rd	4th
Quartile	1st	-1.310*** (0.457)	-1.138 (1.555)	-0.546 (1.371)	-2.960 (4.484)
	2nd	-	-1.512 (1.222)	0.110 (0.280)	-0.753 (0.684)
	3rd	-	-	-0.733** (0.329)	-0.651 (0.576)
	4th	-	-	-	0.149 (0.229)

Notes: The table presents a matrix of results for different sub-samples of couples selected based on their eigenvector centrality. Entry (1,1) in the matrix reports the coefficient on friendship in specification (2) - Table 4 for the sub-sample of couples where one both individuals are in the first quartile of eigenvector centrality. Entry (1,2) reports the same coefficient for the sub-sample of couples where one individual is in the first quartile of eigenvector centrality and the other is in the second quartile and so on. Standard errors are two-way clustered by individual 1's group and by individual 2's group. The sample used is the benchmark sample described in the footnote to Table A1. Weak IV stat reports the Kleibergen-Paap cluster-robust statistic, distributed as a Chi-squared under the null hypothesis of weak identification.

## A Appendix

Table A1: Description of Variables - Dyadic Data

Variable	Description
Friendship	1 if at least one of the two individual has named the other as one of her friends (i.e. undirected friendship), zero otherwise.
Same Integration Group	1 if the two individuals have attended the same integration group over the 2013 summer, 0 otherwise.
Same Tutorial Group	1 if the two individuals have been part of the same "triplette" group, 0 otherwise.
Difference in Political Opinion (March 2014)	Absolute difference between the political opinions of the two individuals, as declared on a 1-10 scale.
Initial difference in Political Opinion (August 2013)	Absolute difference between the political opinions of the two individuals, as declared on a 1-10 scale.
Difference in Political Opinion in 2015	Absolute difference between the political opinions of the two individuals, as declared on a 1-10 scale.
Difference in Political Opinion in 2014	Absolute difference between the political opinions of the two individuals, as declared on a 1-10 scale.
Membership in Some Political Party in 2014	0 if the two individuals are enrolled in a political party. Missing if at least one of them did not answer to this question. 0 otherwise.
Membership in Some Political Party in 2013	0 if the two individuals are enrolled in a political party. Missing if at least one of them did not answer to this question. 0 otherwise.
Membership in the Same Political Party in 2014	0 if the two individuals are enrolled in the same political party. Missing if at least one of them did not answer to this question. 0 otherwise.
Membership in Some Association	0 if the two individuals are enrolled in the a student association. Missing if at least one of them did not answer to this question. 0 otherwise.
Membership in the Same Association	0 if the two individuals are enrolled in the same student association. Missing if at least one of them did not answer to this question. 0 otherwise.
Sum of Movements	Sum of absolute movements in political opinion among the two individuals between August 2013 and March 2014.
Staying in Same Position	1 if both individuals have not changed political opinion between August 2013 and March 2014
Moving in Same Direction	1 if both individuals have changed their political opinion between August 2013 and March 2014 and their new political opinion have moved in the same direction relative to their initial one, 0 otherwise.
Moving in Non-Opposing Direction	1 if between August 2013 and March 2014 the two individuals have not changed their political opinion in opposing directions (e.g. one has moved to the right and the other to the left), 0 otherwise.
Moving in Same Converging Direction	1 if both individuals have changed their political opinion between August 2013 and March 2014, their new political opinion have moved in the same direction relative to their initial one and the difference in their political opinions has diminished, 0 otherwise.
Strong Convergence	1 if the two individuals have different initial political positions, none of them have moved away from and at least one of them has moved towards the other initial political opinion relative to her own initial position. Missing if the two individuals have the same initial political opinion. 0 otherwise.
Weak Convergence	1 if the two individuals have different initial political positions, none of them have moved away from the other initial political opinion relative to her own initial position. Missing if the two individuals have the same initial political opinion. 0 otherwise.
Strong Divergence	1 if the two individuals have both moved away from each others initial political position relative to their own initial position, 0 otherwise.
Weak Divergence	1 if the two individuals have not moved towards each others political position relative to their own initial position, 0 otherwise.

Table A1: Description of Variables - Dyadic Data

Variable	Description
Left-Left	1 if both individuals in the couple have an initial political opinion of less than 4, 0 otherwise.
Left-Center	1 if one individual has an initial political opinion of less than 4 and the other has an initial political opinion of more than 3 and less than 8, 0 otherwise.
Left-Right	1 if one individual has an initial political opinion of less than 4 and the other has an initial political opinion of more than 7, 0 otherwise.
Center-Center	1 if both individuals in the couple have an initial political opinion of more than 3 and less than 8, 0 otherwise.
Center-Right	1 if one individual has an initial political opinion of more than 3 and less than 8 and the other has an initial political opinion of more than 7, 0 otherwise.
Right-Right	1 if both individuals in the couple have an initial political opinion of more than 7, 0 otherwise.
Friendship Strength 1	1 1 if at least one of the two individual has named the other as one of her friends and has stated that their friendship is at least as intense as a "mere relationship", 0 otherwise.
Friendship Strength 2	1 1 if at least one of the two individual has named the other as one of her friends and has stated that their friendship is at least as intense as a "friendship link", 0 otherwise.
Friendship Strength 3	1 1 if at least one of the two individual has named the other as one of her friends and has stated that their friendship is at least as intense as a "close friendship", 0 otherwise.
Friendship Strength 4	1 1 if at least one of the two individual has named the other as one of her friends and has stated that their friendship is at least as intense as a "very close friendship", 0 otherwise.
Shortest Path	Shortest path between the two individuals.
1st vs 2nd order only	Equal to the shortest path if this is either 1 or 2, missing otherwise.
2nd vs 3rd order only	Equal to the shortest path if this is either 2 or 3, missing otherwise.
3rd vs more order only	Equal to the shortest path if this is either 3 or more, missing otherwise.
Difference in Differences in Political Opinion	"Difference in Political Opinion (March 2014)" minus Difference in Political Opinion (August 2013)
Importance of Sc Po Degree	0 if the two individuals have the same (qualitative) opinion on the importance of a degree from Sciences Po as a determinant of success, 1 otherwise.
Importance of Individual Network	0 if the two individuals have the same (qualitative) opinion on the importance of a person's individual network as a determinant of success, 1 otherwise.
Importance of Individual Effort	0 if the two individuals have the same (qualitative) opinion on the importance of a person's individual effort as a determinant of success, 1 otherwise.
Importance of Sc Po Network	0 if the two individuals have the same (qualitative) opinion on the importance of Sciences Po network as a determinant of success, 1 otherwise.
Importance of Family Network	0 if the two individuals have the same (qualitative) opinion on the importance of family network as a determinant of success, 1 otherwise.



Table A1: Description of Variables - Dyadic Data

Variable	Description
Same Gender	1 if the two individuals are of the same gender, 0 otherwise.
Same Female	1 if the two individuals are both female, 0 otherwise.
Same Nationality	1 if the two individuals share a common nationality, 0 otherwise.
Same French	1 if the two individuals are both french, 0 otherwise.
Same Double French Nationality	1 if the two individuals are both french and they both have a second nationality.
Same Admission	1 if the two individuals have been admitted through the same admission procedure, 0 otherwise.
Same Priority Admission	1 if the two individuals have both been admitted through the priority admission procedure, 0 otherwise.
Same Department of High School	1 if the two individuals have completed their high school diploma in the same french department, 0 otherwise.
Same Region of High School	1 if the two individuals have completed their high school diploma in the same french region, 0 otherwise.
Same High School Major	1 if the two individuals have a high school diploma with the same major, 0 otherwise.
Difference in Tuition Fees	Absolute difference in tuition fees among the couple (proxy for family income).
Same No Fees	1 if both individuals do not pay tuition fees, 0 otherwise.
Same Parents' Profession	1 if at least one of an individual's parents has common profession with the parents of the other individual, 0 otherwise.
Same ZIP code	1 if the two individuals live in the same ZIP code area, 0 otherwise.
Same Program	1 if the two individuals are enrolled in the same program, 0 otherwise.

Any of the above mentioned variables is missing whenever at least one of the two individuals in the couple did not answer to the related question in the survey. We then drop couples that contain at least one individual in the top 5 percent of the distribution of time taken to name each friend (about 82 seconds per friend or 13.5 minutes for individuals with 10 friends)

Table A2 - Panel A: Independent Variables (at the individual level)

Variable	(1)		(2)			
	Full Sample		Benchmark Sample			
	Mean	Standard deviation	Mean	Obs.	Standard deviation	Obs.
Gender (1= Female)	0.592	(0.492)	796	0.583	(0.494)	331
Honors Graduation	0.754	(0.431)	796	0.831	(0.375)	331
Tuition Fees	3602	(3495)	713	3826	(3328)	331

Notes: Summary statistics (1) refer to the full individual sample, where the full sample is made of all the individual observations for which the variable described is not missing. Summary statistics (2) refer to the benchmark sample, where the benchmark sample is defined as the individual sample containing all the individuals that are present in our benchmark dyadic sample as described in Table A1.

Table A2 - Panel B: Independent Variables (at the dyadic level)

Variable	(1)			(2)		
	Full Sample			Benchmark Sample		
	Mean	Standard deviation	Obs.	Mean	Standard deviation	Obs.
Same Gender	0.522	(0.4995)	294,306	0.512	(0.4998)	54,615
Same Female	0.369	(0.483)	294,306	0.339	(0.473)	54,615
Same Nationality	0.928	(0.259)	291,060	0.964	(0.186)	54,615
Same Double French Nationality	0.774	(0.418)	294,680	0.778	(0.416)	54,615
Same Admission	0.565	(0.496)	294,306	0.675	(0.468)	54,615
Same Priority Admission	0.029	(0.168)	294,306	0.015	(0.122)	54,615
Same Department of High School	0.052	(0.221)	265,740	0.059	(0.237)	54,615
Same Region of High School	0.253	(0.435)	264,710	0.251	(0.434)	54,615
Same High School Major	0.363	(0.481)	294,306	0.375	(0.484)	54,615
Difference in Tuition Fees	3879	(3005)	245,520	3759	(2832)	54,615
Same No Fees	0.476	(0.499)	294,306	0.614	(0.487)	54,615
Same Parents' Profession	0.422	(0.494)	238,632	0.442	(0.497)	54,615
Same ZIP code	0.026	(0.160)	293,222	0.026	(0.159)	54,615
Same Program	0.520	(0.4995)	294,306	0.508	(0.4999)	54,615

Notes: Summary statistics (1) refer to the full dyadic sample, where full sample is defined as the set of all pairs for which both members named at least one friend or stated that they have no friends in Sciences Po. Summary statistics (2) refer to the benchmark dyadic sample as described in Table A1.

Table A3: Descriptive Statistics on Recall Bias

		Percentages (Actual Pol. Op. in 2014 as a reference)										N
		Actual (Individual) Political Opinion in 2014										Total
		1	2	3	4	5	6	7	8	9	10	
Recalled P. Op. in 2014	1	0	1	0	0	0	0	0	0	0	0	1
	2	0	5	1	2	0	0	0	0	0	0	8
	3	1	6	19	7	3	1	0	0	0	0	37
	4	0	0	7	16	21	4	1	0	0	0	49
	5	0	0	2	7	25	6	1	0	0	0	41
	6	1	0	0	1	6	21	8	3	0	0	40
	7	0	0	0	1	0	6	12	5	0	0	24
	8	0	0	0	0	0	1	6	6	1	0	14
	9	0	0	0	0	0	0	2	1	0	1	4
	10	0	0	0	0	0	0	0	0	0	0	0
Total		2	12	29	34	55	39	30	15	1	1	218

Notes: The table reports the joint empirical distribution of actual (horizontal axes) and recalled (vertical axes) individual political opinion in 2014. The table makes use of the individual linked 2014-2015 dataset. The sample includes only those individuals present both in the 2014 and in the 2015 survey and for which the variables "actual political opinion in 2014" and "recalled political opinion in 2014" are not missing.

Table A4: Recall Bias Regression on Individual Data

Dependent Variable:	Absolute Recall Bias	Recall Bias
	(1)	(2)
Actual Political Opinion in 2015	0.00426 (0.116)	-
Actual Political Opinion in 2014	0.00609 (0.137)	-
Diff. in Actual Political Opinion Between 2015 and 2014	-	0.574*** (0.0437)
Observations	216	216
Double Group Clust.	Yes	Yes

Notes: The table makes use of the individual linked 2014-2015 dataset. Standard errors are clustered at the group level. The sample includes only those individuals present both in the 2014 and in the 2015 survey and for which the variables "political opinion in 2015", "actual political opinion in 2014" and "recalled political opinion in 2014" are not missing.

We define as "Recall Bias" the difference between political opinion in 2014 as declared in the 2015 survey (i.e. recalled political opinion in 2014) and political opinion in 2014 as declared in the 2014 survey (i.e. actual political opinion in 2014) and "Absolute Recall Bias" the absolute value of this difference.

Table A5: Convergence of Political Opinion - Alternative Specification

Dependent Variable:	Difference in Differences in Political Opinion (March 2014 - August 2013)			
	(1)	(2)	(3)	(4)
	IV	IV	IV	IV
Friendship	-0.841*** (0.275)	-0.902*** (0.286)	-0.928*** (0.298)	-0.940*** (0.330)
Same Tutorial Group	-	-	0.310*** (0.101)	0.271 (0.191)
Friendship * Same Tutorial Group	-	-	-	0.117 (0.615)
Observations	54,615	54,615	54,615	54,615
IV		Same Integration Group		
Controls	No	Yes	Yes	Yes
Double Group Clust.	Yes	Yes	Yes	Yes
WeakIV test stat.	114.2	113.2	108.8	20.07

Notes: Standard errors are two-way clustered by individual 1's group and by individual 2's group. The sample used is the benchmark sample described in the footnote to Table A1. Weak IV stat reports the Kleibergen-Paap cluster-robust statistic, distributed as a Chi-squared under the null hypothesis of weak identification.

Table A6: Convergence - Different Sub-samples

Dependent Variables:	Difference in Political Opinion (March 2014)					
Conditions:	Left-Left	Left-Center	Left-Right	Center-Center	Center-Right	Right-Right
	(1)	(2)	(3)	(4)	(5)	(6)
Friendship	-2.421** (1.135)	-0.490 (0.470)	-0.460 (1.072)	-0.259 (0.361)	-0.696* (0.360)	0.00200 (0.278)
Initial Diff. in Political Opinion (August 2013)	0.255** (0.111)	0.547*** (0.0419)	0.789*** (0.133)	0.346*** (0.0491)	0.580*** (0.0561)	0.395* (0.212)
Observations	2,628	15,622	3,212	22,791	9,416	946
IV	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Double Group Clust.	Yes	Yes	Yes	Yes	Yes	Yes
WeakIV test stat.	4.262	45.80	21.62	46.06	32.53	26.35

Notes: Standard errors are two-way clustered by individual 1's group and by individual 2's group. The sample used is the benchmark sample described in the footnote to Table A1. Weak IV stat reports the Kleibergen-Paap cluster-robust statistic, distributed as a Chi-squared under the null hypothesis of weak identification.

Table A7 - Panel A: Convergence of Political and Associative Activities - Conditional on Similar Initial Opinion

Dependent Variables:	Membership in Student Associations	Membership in Same Association*	Membership in Same Association	Membership in a Political Party	Membership in the Same Political Party*
Condition:	Difference in Initial Political Opinion < 2				
	(1)	(2)	(3)	(4)	(5)
Friendship	-0.267* (0.157)	0.223 (0.146)	0.0788 (0.0665)	0.0424 (0.0949)	0.185 (0.336)
Political Membership (August 2013)	-	-	-	0.449*** (0.0769)	-
Observations	19,073	9,727	21,949	21,274	305
IV	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes
Double Group Clust.	Yes	Yes	Yes	Yes	Yes
WeakIV test stat.	51.83	36.26	59.77	62.83	2.618

\* conditional on the individuals in the couple being enrolled in some association/political party.

Notes: The dependent dummy variables are equal to 0 if the characteristic is the same for the two individuals in the pair and 1 if the characteristic is not the same. Standard errors are two-way clustered by individual 1's group and by individual 2's group. The sample used is the benchmark sample described in the footnote to Table A1. Weak IV stat reports the Kleibergen-Paap cluster-robust statistic, distributed as a Chi-squared under the null hypothesis of weak identification.

Table A7 - Panel B: Convergence of Political and Associative Activities - Conditional on Different Initial Opinion

Dependent Variables:	Membership in Student Associations	Membership in Same Association*	Membership in Same Association	Membership in a Political Party	Membership in the Same Political Party*
Condition:	Difference in Initial Political Opinion $\geq 2$				
	(1)	(2)	(3)	(4)	(5)
Friendship	0.134 (0.136)	0.140 (0.104)	0.0742* (0.0434)	0.0355 (0.0863)	-0.687 (0.433)
Political Membership (August 2013)	-	-	-	0.480*** (0.0749)	-
Observations	28,822	14,583	32,666	31,376	475
IV	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes
Double Group Clust.	Yes	Yes	Yes	Yes	Yes
WeakIV test stat.	71.18	43.36	91.45	83.85	1.506

\* conditional on the individuals in the couple being enrolled in some association/political party.

Notes: The dependent dummy variables are equal to 0 if the characteristic is the same for the two individuals in the pair and 1 if the characteristic is not the same. Standard errors are two-way clustered by individual 1's group and by individual 2's group. The sample used is the benchmark sample described in the footnote to Table A1. Weak IV stat reports the Kleibergen-Paap cluster-robust statistic, distributed as a Chi-squared under the null hypothesis of weak identification.

Table A7 - Panel C: Convergence on Associative Activities - Conditional on Different Initial Opinion

Dependent Variable:	Membership in						
	Same Association			Associations of Same Type			
Type of Association:	Strictly Political or Student Union	Political	Related to One's Identity	Related to Policy Issues	Sports	Political	Political
Condition:	Difference in Initial Political Opinion $\geq 2$						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Friendship	-0.0108 (0.0299)	0.0500 (0.0802)	-0.0728 (0.162)	-0.123 (0.146)	0.057 (0.2378)	-0.0252*** (0.00893)	0.00575 (0.0358)
Observations	14,583	14,583	14,583	14,583	14,583	14,583	14,583
IV	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Double Group Clust.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
WeakIV test stat.	43.36	43.36	43.36	43.36	43.36	43.36	43.36

Notes: The dependent dummy variables are equal to 0 if the characteristic is the same for the two individuals in the pair and 1 if the characteristic is not the same. Standard errors are two-way clustered by individual 1's group and by individual 2's group. The sample used is the benchmark sample described in the footnote to Table A1. Weak IV stat reports the Kleibergen-Paap cluster-robust statistic, distributed as a Chi-squared under the null hypothesis of weak identification.

Table A8 - Panel A: Weak Divergence and Initial Differences in Political Opinion

Dependent Variables:	Weak Divergence in Political Opinion					
Conditions	Difference in Initial Political Opinion:					
		=0	=1	=2	> 2	< 2
	(1)	(2)	(3)	(4)	(5)	(6)
Friendship	-0.231 (0.147)	-0.141 (0.213)	-0.193 (0.124)	-0.104 (0.199)	-0.154* (0.0794)	-0.173* (0.101)
Friendship*Initial Diff. in Political Opinion	0.0309 (0.0411)	-	-	-	-	-
Initial Diff. in Political Opinion (August 2013)	-0.0838*** (0.00295)	-	-	-	-0.0311*** (0.00447)	-0.371*** (0.00524)
Observations	54,615	7,714	14,235	11,644	21,022	21,949
IV	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Double Group Clust.	Yes	Yes	Yes	Yes	Yes	Yes
WeakIV test stat.	30.97	46.36	41.59	18.14	68.69	59.77

Notes: Standard errors are two-way clustered by individual 1's group and by individual 2's group. The sample used is the benchmark sample described in the footnote to Table A1. Weak IV stat reports the Kleibergen-Paap cluster-robust statistic, distributed as a Chi-squared under the null hypothesis of weak identification.

Table A8 - Panel B: Single Divergence and Initial Differences in Political Opinion

Dependent Variables:	Single Divergence in Political Opinion					
Conditions	Difference in Initial Political Opinion:					
		=0	=1	=2	> 2	< 2
	(1)	(2)	(3)	(4)	(5)	(6)
Friendship	0.0171 (0.143)	0.282 (0.209)	-0.119 (0.113)	-0.0248 (0.172)	-0.132** (0.0662)	0.0199 (0.110)
Friendship*Initial Diff. in Political Opinion	-0.0322 (0.0408)	-	-	-	-	-
Initial Diff. in Political Opinion (August 2013)	-0.0641*** (0.00319)	-	-	-	-0.0260*** (0.00386)	-0.290*** (0.00648)
Observations	54,615	7,714	14,235	11,644	21,022	21,949
IV	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Double Group Clust.	Yes	Yes	Yes	Yes	Yes	Yes
WeakIV test stat.	30.97	46.36	41.59	18.14	68.69	59.77

Notes: Standard errors are two-way clustered by individual 1's group and by individual 2's group. The sample used is the benchmark sample described in the footnote to Table A1. Weak IV stat reports the Kleibergen-Paap cluster-robust statistic, distributed as a Chi-squared under the null hypothesis of weak identification.

Table A8 - Panel C: Strong Convergence and Initial Differences in Political Opinion

Dependent Variables:	Strong Convergence in Political Opinion				
Conditions	Difference in Initial Political Opinion:				
	=0	=1	=2	>2	
	(1)	(2)	(3)	(4)	(5)
Friendship	-0.170 (0.167)	-	-0.00560 (0.115)	-0.212 (0.129)	0.00387 (0.176)
Friendship*Initial Diff. in Political Opinion	0.0486 (0.0803)	-	-	-	-
Initial Diff. in Political Opinion (August 2013)	0.0590*** (0.00640)	-	-	-	0.0531*** (0.0129)
Observations	46,901	-	14,235	11,644	21,022
IV	Yes	-	Yes	Yes	Yes
Controls	Yes	-	Yes	Yes	Yes
Double Group Clust.	Yes	-	Yes	Yes	Yes
WeakIV test stat.	22.53	-	41.59	18.14	68.69

Notes: Standard errors are two-way clustered by individual 1's group and by individual 2's group. The sample used is the benchmark sample described in the footnote to Table A1. Weak IV stat reports the Kleibergen-Paap cluster-robust statistic, distributed as a Chi-squared under the null hypothesis of weak identification.

Table A8 - Panel D: Weak Convergence and Initial Differences in Political Opinion

Dependent Variables:	Weak Convergence in Political Opinion				
Conditions	Difference in Initial Political Opinion:				
	=0	=1	=2	>2	
	(1)	(2)	(3)	(4)	(5)
Friendship	0.0388 (0.189)	-	0.0128 (0.149)	-0.0588 (0.233)	0.0892 (0.135)
Friendship*Initial Diff. in Political Opinion	-0.00186 (0.0670)	-	-	-	-
Initial Diff. in Political Opinion (August 2013)	0.110*** (0.00667)	-	-	-	0.0725*** (0.0101)
Observations	46,901	-	14,235	11,644	21,022
IV	Yes	-	Yes	Yes	Yes
Controls	Yes	-	Yes	Yes	Yes
Double Group Clust.	Yes	-	Yes	Yes	Yes
WeakIV test stat.	22.53	-	41.59	18.14	68.69

Notes: Standard errors are two-way clustered by individual 1's group and by individual 2's group. The sample used is the benchmark sample described in the footnote to Table A1. Weak IV stat reports the Kleibergen-Paap cluster-robust statistic, distributed as a Chi-squared under the null hypothesis of weak identification.

Table A8 - Panel E: Co-movement and Initial Differences in Political Opinion

Dependent Variables:	Moving in the Same Direction					
Conditions	Difference in Initial Political Opinion:					
	=0	=1	=2	>2	< 2	
	(1)	(2)	(3)	(4)	(5)	(6)
Friendship	0.177* (0.103)	0.270 (0.187)	0.0295 (0.0804)	0.143 (0.255)	0.0650 (0.0967)	0.111 (0.0722)
Friendship*Initial Diff. in Political Opinion	-0.0357 (0.0386)	-	-	-	-	-
Initial Diff. in Political Opinion (August 2013)	-0.0271*** (0.00601)	-	-	-	-0.0265*** (0.00503)	-0.00642 (0.00403)
Observations	54,615	7,714	14,235	11,644	21,022	21,949
IV	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Double Group Clust.	Yes	Yes	Yes	Yes	Yes	Yes
WeakIV test stat.	30.97	46.36	41.59	18.14	68.69	59.77

Notes: Standard errors are two-way clustered by individual 1's group and by individual 2's group. The sample used is the benchmark sample described in the footnote to Table A1. Weak IV stat reports the Kleibergen-Paap cluster-robust statistic, distributed as a Chi-squared under the null hypothesis of weak identification.

Table A9: Robustness: Excluding Nationalities

Dependent Variable:	Difference in Political Opinion			
Excluding:	Algeria	Germany	Belgium	Spain
Friendship	-0.436* (0.241)	-0.522** (0.238)	-0.534** (0.233)	-0.512** (0.220)
Observations	53,301	52,975	53,956	54,285
Excluding:	Italy	Madagascar	Morocco	Senegal
Friendship	-0.543** (0.233)	-0.546** (0.228)	-0.593*** (0.228)	-0.546** (0.229)
Observations	53,628	54,285	53,301	54,285

Notes: Standard errors are two-way clustered by individual 1's group and by individual 2's group. The sample used is the benchmark sample described in the footnote to Table A1. Weak IV stat reports the Kleibergen-Paap cluster-robust statistic, distributed as a Chi-squared under the null hypothesis of weak identification.



Table A10: Robustness: Excluding Names Starting with a Given Alphabet Letter

Dependent Variable:	Difference in Political Opinion								
Excluding:	A	B	C	D	E	F	G	H	I
Friendship	-0.586** (0.243)	-0.472* (0.268)	-0.376 (0.290)	-0.843*** (0.269)	-0.574*** (0.216)	-0.554** (0.229)	-0.449** (0.220)	-0.542** (0.230)	-0.597** (0.239)
Observations	50,403	40,186	46,056	45,150	53,628	50,721	48,205	49,770	53,301
Excluding:	J	K	L	M	N	O	P	Q	R
Friendship	-0.545*** (0.204)	-0.501** (0.229)	-0.343* (0.201)	-0.411* (0.222)	-0.532** (0.226)	-0.624** (0.247)	-0.599*** (0.222)	-0.557** (0.224)	-0.573** (0.230)
Observations	51,681	53,628	43,071	46,056	53,956	53,301	50,086	54,285	49,141
Excluding:	S	T	U	V	W	X	Y	Z	"DE ", "D ", "DU "
Friendship	-0.548** (0.235)	-0.526** (0.235)	-0.546** (0.234)	-0.476* (0.243)	-0.535** (0.233)	-0.538** (0.228)	-0.545** (0.235)	-0.531** (0.231)	-0.654** (0.264)
Observations	48,205	50,403	54,285	52,003	54,285	54,615	53,956	54,285	51,681

Notes: Standard errors are two-way clustered by individual 1's group and by individual 2's group. The sample used is the benchmark sample described in the footnote to Table A1. Weak IV stat reports the Kleibergen-Paap cluster-robust statistic, distributed as a Chi-squared under the null hypothesis of weak identification.

## Formulaire de consentement

Nous vous invitons à participer à une étude sur les attitudes et opinions des étudiants de Sciences Po.

Ces informations sont collectées uniquement afin de réaliser un projet scientifique. Elles ne seront pas utilisées pour des buts administratifs et lucratifs. **Vos réponses resteront strictement anonymes.** Dès lors que les données auront été collectées, vos nom et prénom seront remplacés par un code ne permettant en aucun cas de vous identifier. **Les personnes utilisant ces données n'auront donc à aucun moment accès à votre identité réelle.**

Ce questionnaire est administré dans le cadre d'une recherche scientifique financée par la commission européenne (ERC Starting Grant «Trust N° 240923 » de Yann Algan) et validé par le comité d'éthique de la commission européenne sur la protection et l'anonymat des données. En répondant honnêtement et exhaustivement aux questions posées, vous permettrez de faire progresser les connaissances scientifiques.

La participation à ce questionnaire ne vous prendra qu'une vingtaine de minutes.

La participation à cette étude donne lieu à une gratification et vous offre la **possibilité de participer à d'autres études** dans le futur, **qui donneront lieu elles- aussi à une gratification.**

Vous n'êtes soumis à aucune obligation de participer à cette étude et, si vous changez d'avis, vous pouvez à tout moment arrêter votre participation. Vous ne recevrez dans ce cas aucun paiement.

☐ J'ai pris connaissance des conditions d'accès et des modalités de l'étude et les accepte.

## **Introduction : votre réseau social**

**Attention ! Certaines questions sont proches, mais requièrent des réponses différentes de votre part. Il est important de lire les questions de manière attentive !**

Nous allons vous demander maintenant quels étaient vos amis durant votre scolarité à Sciences Po.

**En participant à cette étude vous pouvez recevoir une gratification : 50 mini-iPad sont à gagner !**

Attention ! Répondez fidèlement à ce questionnaire : votre chance de gagner augmentera en fonction de la véracité de vos réponses, croisées avec les réponses de vos camarades. Ce croisement est effectué par ordinateur, les personnes que vous citerez ne pourront à aucun moment avoir accès à vos réponses. Réciproquement, vous ne pourrez à aucun moment savoir qui vous a cité.

Il n'y a aucune façon de déduire les réponses des autres participants à l'issue de cette enquête.

**Nous vous poserons plusieurs fois des questions identiques, mais qui portent sur des périodes différentes. Vérifiez donc bien à quelle période correspond la question.**

**Nous vous demandons de répondre à ce questionnaire seul et sans parler de vos réponses à vos amis.** Ce questionnaire est en effet strictement personnel. Nous vous demandons également de répondre à ce questionnaire en une seule fois, et de la manière la plus spontanée possible.

**Q1.a. Citez vos amis (jusqu'à 10 maximum) à la fin de la première année du premier cycle (en juin 2010) parmi les étudiants de Sciences Po dans votre promotion d'entrée.**

**Exemple :** J'ai rencontré Z en **septembre 2009** à SciencesPo., et je suis devenu son ami. Je cite son nom. J'ai rencontré W en **août 2010**. Je suis devenu son ami, mais je ne cite pas son nom dans cette partie.


☐ Je n'ai aucun ami(e)s.

**Q1.b. Veuillez compléter le tableau ci-dessous pour chacun de vos amis :**

Si vous et votre ami vous citez mutuellement, vous recevrez tous les deux un jeton supplémentaire. De plus, si vous choisissez des réponses compatibles à la question sur la situation dans laquelle vous vous êtes rencontrés, et à celle concernant le temps passé ensemble, vous recevrez tous les deux un jeton supplémentaire.

**Exemple :** J'ai rencontré mon ami Z en septembre 2009 dans une association de Sciences Po., et pendant l'année universitaire 2009-2010 nous avons passé en moyenne moins de 30 minutes ensemble chaque semaine. Je cite son nom, et il me cite aussi dans ce questionnaire. Nous gagnons chacun un jeton. Nous choisissons les réponses « Dans une association de Sciences Po. » et « Moins de 30 minutes ». Nous gagnons chacun un jeton de plus.

Ami	Comment avez-vous rencontré cet ami ?	Pensez-vous que cette personne vous citera dans le cadre de ce questionnaire ?	Indiquez le	Quelle activité effectuiez vous principalement avec cet ami en dehors des cours (activité académique, loisirs et sports, associations syndicales ou politiques...)?
			temps passé en moyenne chaque semaine pendant l'année scolaire 2009-2010 avec cette personne (en dehors des heures de cours) :	
ABDELKARIM		<input type="radio"/> Oui <input checked="" type="radio"/> Non		
Fatima Ezzahra				
ABOU-		<input type="radio"/> Oui <input checked="" type="radio"/> Non		
JAOUDE Marie				

**Q2.a. Citez vos amis parmi les étudiants de Sciences Po (jusqu'à 10 maximum) dans votre promotion d'entrée aujourd'hui (en janvier 2014), dans l'ordre d'importance.**

**Exemple :** J'ai rencontré W en août 2011. Je suis devenu(e) son ami(e), et je cite son nom dans cette partie.


☐ Je n'ai aucun ami(e)s.

**Q2.b. Veuillez compléter le tableau ci-dessous pour chacun de vos amis :**

Si vous et votre ami vous citez mutuellement, vous recevrez tous les deux un jeton supplémentaire. De plus, si vous choisissez des réponses compatibles à la question sur la situation dans laquelle vous vous êtes rencontrés, et à celle concernant le temps passé ensemble, vous recevrez tous les deux un jeton supplémentaire.

**Exemple :** J'ai rencontré mon ami Z en septembre 2011 dans une association de Sciences Po, et pendant l'année scolaire 2012-2013 nous avons passé en moyenne moins de 30 minutes ensemble chaque semaine. Je cite son nom, et il me cite aussi dans ce questionnaire. Nous gagnons chacun un jeton. Nous choisissons les réponses « Dans une association de Sciences Po » et « Moins de 30 minutes ». Nous gagnons chacun un jeton de plus.

Ami	Comment avez-vous rencontré cet ami ?	Pensez-vous que cette personne vous citera dans le cadre de ce questionnaire ?	Indiquez le temps passé en moyenne chaque semaine pendant l'année scolaire 2012-2013 avec cette personne (en dehors des heures de cours) :	Quelle activité effectuiez vous principalement avec cet ami en dehors des cours (activité académique, loisirs et sports, associations syndicales ou politiques...)?
ADANT Juliette		<input type="radio"/> Oui <input type="radio"/> Non		
ACHART Isabelle		<input type="radio"/> Oui <input type="radio"/> Non		
ABESS Karima		<input type="radio"/> Oui <input type="radio"/> Non		

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**Q3 : Avez-vous été membre actif d'organisations de Sciences Po. ?**

*Ces organisations peuvent être les associations reconnues par Sciences Po, les partis politiques actifs à Sciences Po, les syndicats étudiants, le BDE, le BDA, l'AS...*

**a) Citez au plus 5 organisations dans lesquelles vous avez été le plus actif depuis septembre 2012.**


**b) Citez au plus 5 organisations dans lesquelles vous avez été le plus actif pendant la première année du premier cycle (2009-2010).**




**Q4.a : Aujourd'hui, comment vous situez-vous en terme d'opinion politique sur une échelle de 1 à 10 où 1 correspond à l'extrême gauche, 5-6, au centre gauche / centre droit, et 10 l'extrême droite ?**

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10

**Q4.b : En juillet 2012, comment vous situiez-vous en terme d'opinion politique sur une échelle de 1 à 10 où 1 correspond à l'extrême gauche, 5-6, au centre gauche / centre droit, et 10 l'extrême droite ?**

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10

**Q4.c : A la fin de la première année du premier cycle (juin 2010), comment vous situiez-vous en terme d'opinion politique sur une échelle de 1 à 10 où 1 correspond à l'extrême gauche, 5-6, au centre gauche / centre droit, et 10 l'extrême droite ?**

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10

**Q4.d : En août 2009, juste avant votre entrée à Sciences Po comment vous situiez-vous en terme d'opinion politique sur une échelle de 1 à 10 où 1 correspond à l'extrême gauche, 5-6, au centre gauche / centre droit, et 10 l'extrême droite ?**

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10

**Q5.a Avez-vous été membre d'un parti politique dans le passé ?**

☐ Oui ☐ Non

***Lesquels :***

Parti 1 :

Période d'adhésion :

Parti 2 :

Période d'adhésion :

**Q5.b Etes-vous membre aujourd'hui d'un parti politique ?**

☐ Oui ☐ Non

***Lesquels :***

Parti :

Depuis quelle date ?

**Q5.c Pour qui avez-vous voté au premier tour de l'élection présidentielle de 2012 :**

**Q6.a. D'une manière générale, diriez-vous que l'on peut faire confiance à la plupart des gens ou que l'on n'est jamais assez prudent quand on a affaire aux autres ?**

**Q6.b Nous allons maintenant parler des gens qui viennent de pays moins développés pour travailler ici. Qu'est-ce que le gouvernement devrait faire selon vous ?**

**Q6.c. Pensez-vous que les facteurs suivants auront de l'influence sur votre succès professionnel dans le futur :**

votre diplôme

les connaissances et compétences acquises au cours de vos études

vos efforts personnels

votre réseau formé à Sciences Po

votre réseau familial

**Q6.d Si vous avez fait un stage cette année, comment avez-vous eu connaissance de ce stage :**

- ☐ Réseau de connaissance à Sciences Po
- ☐ Réseau familial
- ☐ Offre sur les sites de Sciences Po (Sciences Po Avenir, site de master)
- ☐ Recherche personnelle

Quelle note sur 10 donneriez-vous à l'organisation des enseignements autour des triplettes en 1A ?

Quels en sont les avantages ?

- ☐ Facilite l'intégration à Sciences Po
- ☐ Se faire des amis plus facilement
- ☐ Se faire des amis plus divers
- ☐ Permet le travail en commun
- ☐ Améliore la qualité du travail en commun
- ☐ Autre : Précisez :

## **Fin du questionnaire**

Merci de votre participation.