Mass Interpersonal Persuasion: An Early View of a New Phenomenon

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Abstract: In 2007 a new form of persuasion emerged: mass interpersonal persuasion (MIP). The advances in online social networks now allow individuals to change attitudes and behaviors on a mass scale. MIP has six components: persuasive experience, automated structure, social distribution, rapid cycle, huge social graph, and measured impact. Before the launch of Facebook Platform, these six components had never come together in one system. As tools for creating MIP become available to ordinary people, individuals and small groups can better reach and persuade masses. This new phenomenon will change the future of persuasion.

Keywords: persuasive technology, captology, social networking, persuasion, Facebook, mass interpersonal persuasion, MIP.

1 Introduction

A new form of persuasion emerged in 2007: I call it "mass interpersonal persuasion" (MIP). This phenomenon brings together the power of interpersonal persuasion with the reach of mass media. I believe this new way to change attitudes and behavior is the most significant advance in persuasion since radio was invented in the 1890s.

Before describing MIP in more detail, I want to set expectations. This paper is the print version of my keynote address for the Persuasive Technology 2008 Conference. I have three goals in speaking: to highlight an important new trend in captology, to provoke new ways of thinking, and to share my opinions and experiences. It's a relief that my work here need not be perfect to achieve those goals. These ideas are sure to evolve. To account for this reality, I will post on my website updates to this paper, citations to related work, and comments from other people. In this way, we all learn more about MIP.

2 Facebook Makes a New Form of Persuasion Possible

The emergence of MIP became possible recently because Facebook, a social networking service, created a new way for third parties to create and distribute

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interactive applications (web apps) to the millions of people linked in an online social network. Facebook made this possible on May 24th, 2007, when they launched Facebook Platform (their API and related tools).

Before the launch, I was under a nondisclosure agreement with Facebook. I was invited to be a Developer Partner and would demonstrate what a third-party developer could do with the Facebook Platform. After learning about the confidential plans for Platform, I knew that Facebook's innovation would have big implications for the tech industry, but I didn't know for sure how users would respond; no one did.

On the designated day, I gathered with other Facebook Developer Partners for the Platform launch event in San Francisco. After the ceremonial announcement, the audience was turned loose to roam the exhibit hall and see what the Developer Partners had created. My team had built two applications that allowed voice interactions online. Other Developer Partners created apps that allowed Facebook users to share music or photos. A few companies created social games that people could play online. Overall, about 60 third-party apps were on display.

Within a few days after Facebook Platform launch, public metrics showed how quickly some of the third-party applications grew. Day after day, I saw how Facebook's innovation would allow persuasion to take place, from one friend to another, on a massive scale never before possible. Most Facebook app developers were acquiring thousands of users each day. This was exciting. But the real story involved millions, not thousands.

One company named iLike acquired over one million new users in the first week[1]. Their Facebook application quickly persuaded millions of people to give up personal information about their music preferences[2]. Some of these people were later persuaded to buy concert tickets with friends. As the weeks progressed, I saw how a handful of small companies had tapped into a new phenomenon in persuasion.

As more third-party developers were learning to leverage MIP, Facebook grew quickly over the next few months. In the 16 weeks following Platform launch, Facebook added over 18 million new members. At the end of 2007, Facebook had well over 50 million users, doubling the 24 million they had in late May.

In response to Facebook's surge, other social networking services announced they would also open their platforms to third-party developers. To me, this signaled that MIP wouldn't be just a Facebook phenomenon. This new form of persuasion would become mainstream. The path ahead seemed clear: With the emerging platforms and development tools, ordinary people would be able to create apps and distribute them through social networks online. A small percentage of the creations would reach millions, persuading people in ways that are sometimes trivial and sometimes important.

3 A Stanford Course Leverages Mass Interpersonal Persuasion

To understand MIP better, I decided to teach a course on the psychology and metrics of Facebook applications. A few weeks after the launch of Facebook Platform, I got approval from Stanford's Computer Science Department for the new course. I recruited

[1] http://money.cnn.com/2007/06/01/technology/facebookplatform.fortune/index.htm
[2] http://venturebeat.com/2007/05/26/facebook-users-vote-for-ilike-but-what-happened-to-audio/

a teaching team to bring more skills and perspectives[3]. We planned to have students create applications for Facebook.

However, our course wouldn't just be about writing code. Instead, we wanted students to focus on using psychology in their creations, especially the psychology of persuasion. In addition, we wanted students to use metrics to guide decisions about their applications[4]. For example, rather than having students guess about what name to give their new Facebook app, we wanted them to test various options and use data to support their decision. We encouraged a metrics-driven approach to designing the user experience, including details like creating an interface button: What should the button look like? Where should the button be located in the UI? What text should be on the button?

We also used metrics in our grading plan. The hard numbers, not our opinions, would largely determine a student's grade. For their first app, students would aim for distribution. In the second app, students would aim for user engagement. Both were measurable through Facebook statistics in combination with Google Analytics[5].

We held our first class in late September 2007, four months after Facebook launched Platform. At that point in time, third-party developers had already created over 6,000 applications. Each day over 50 new apps would appear on Facebook. This meant that our students' projects would have lots of competition.

Some wondered if we were too late to the game to get any traction on Facebook. The students worried about competing against big companies and professional development teams backed by deep pockets. Most students had no experience with web apps. And none of our students could use their own money to develop or distribute their applications. Some students wondered if our grading plan was fair. They would be matched against full-time professionals.

In the coming weeks, our class surprised everyone.

When the 10-week course ended in December 2007, our students had persuaded over 16 million people to install their applications. At that point, about one million people each day used an application our students created. As teachers, our response was similar to many in Silicon Valley[6]: We were amazed by the impact of our students' work.

I believe that student projects have never produced such big numbers before: 16 million adopters and 1 million daily users[7]. I wish I could say this was the result of excellent teaching and coaching. But that wouldn't be quite right. These dramatic numbers happened for the first time because MIP was possible for the first time. In other words, our course leveraged a new opportunity in reaching and engaging people

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[3] Dave McClure joined me at the co-instructor. My head TA was Dan Ackerman-Greenberg. Also part of the teaching team were Yee Lee, Rob Fan, Greg Schwartz, and Jia Shen.

[4] The standard metrics tools were limited, so not all teams used metrics as much as we hoped. But many did. In fact, some teams created their own metrics tools.

[5] Though limited, Facebook shares public statistics about each app, which are mostly useful for measuring reach. Google Analytics gives better statistics for user engagement.

[6] The final for our course was a public presentation of student work. Over 500 people attended.

[7] After the course ended, we learned about additional student successes. It seems that by March 2008 the students' creations had generated over 25 million Facebook app installations. In addition, some students also made money. Our head TA believes that Stanford students earned over $500,000 in advertising revenue within a few months.

using technology. In this case, the platform for MIP was Facebook. In the future, we'll see many channels through which MIP can take place, including solutions designed for virtual worlds and for mobile phones.

Some might wonder, "Isn't the Stanford experience a classic example of viral adoption?" The short answer is "no." I'll return to this question after I describe the components in MIP.

4 Six Components in Mass Interpersonal Persuasion

MIP has six components, described below. All of them existed before Facebook launched Platform. But the six components had never been bundled together in one place:

1. **Persuasive Experience:** An experience that is created to change attitudes, behaviors, or both.
2. **Automated Structure:** Digital technology structures the persuasive experience.
3. **Social Distribution:** The persuasive experience is shared from one friend to another.
4. **Rapid Cycle:** The persuasive experience can be distributed quickly from one person to another.
5. **Huge Social Graph:** The persuasive experience can potentially reach millions of people connected through social ties or structured interactions.
6. **Measured Impact:** The effect of the persuasive experience is observable by users and creators.

4.1 Persuasive Experience

First of all, MIP builds on an experience designed to change attitudes, behaviors, or both. This implies that the creator of the experience intends to make impact on people's lives. For example, a political party could design an experience to win support for their candidate by asking people to watch a video online and then to add their name to a public petition. Or, in the health arena, an insurance company might reduce rates each time a person reports his or her exercise behavior to a group of peers online. These are both persuasive experiences; the creators intend to change people's behavior.

MIP focuses on *changing* people's thoughts and behaviors, not simply amusing or informing them. So this is point number one: Success with MIP hinges on a persuasive experience.

The persuasive experiences in MIP gain power by tapping into social influence dynamics. As I see it, social influence is a broad area, with flexible boundaries and competing ways to categorize influence strategies. To simplify things for the purpose of this paper, let me say that MIP often uses these social influence strategies: compliance of many types (direct request, moral appeal, deceit, etc.), ingratiation as outlined by E. E. Jones (giving compliments, conforming to others, presenting self, and rendering favors), and group-level intrinsic motivators as defined by Lepper and Malone (recognition, competition, and cooperation).

To understand specific cases of social influence in MIP, consider how invitations work in Facebook. When a friend of mine on Facebook invites me to use a third-party application, the Facebook system sends me a request. The app creators decide what the text will say. Usually the message is simple. But the psychology is sometimes sophisticated. For example, when a friend invited me to use the app called Lil Green Patch on Facebook, I received the message below.

```
Here is a Strawberry plant for your Green Patch. Could you help me
by sending a plant back? Together we can fight Global Warming!
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The three short sentences in the invitation text use the persuasive strategies of pregiving, reciprocity, direct request, cooperation, altruism, and more.

Another successful application, Top Friends, used this invitation text:

```
Amber Phillips has added you as a Top Friend! Does Amber Phillips
make your Top Friends?
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Again, a few words can put powerful persuasion dynamics into play, leveraging the fact that this request usually comes from someone I know and trust.

On Facebook, users select the friends they want to invite, but the creators of successful apps do not leave the persuasive experience to chance, even if it means putting words in people's mouths. That's not a surprise. Without a successful persuasive experience creators cannot achieve MIP.

In the future, persuasive experiences will become easier to create. Right now, options are limited for people who can't write code. However, any Facebook user today can create a group, such as a war protest group, and set MIP into motion. When it comes to third-party applications, the barriers are getting lower. With templates and wizards to simplify things, we will soon have tools that allow ordinary people – not just political parties and big insurance companies – to create and distribute persuasive experiences to the masses. Automating the experience is the focus of the next section.

4.2 Automated Structure

Next, MIP relies on computers to automate the persuasive experience. The automation serves two functions. First, software can deliver a persuasive experience over and over. Computer code doesn't take a vacation or go on coffee breaks; the machine keeps working. And it delivers the persuasive experience with fidelity. It doesn't do a crummy job if distracted or improvise if unprepared. So once someone creates a persuasive experience that works in digital form, code can replicate this precise experience over and over.

The second point is that the automation makes it easier for people to share the experience with others. For example, suppose Sarah Politico wants to motivate friends to join a rally to support Candidate X. An automated experience makes this easy for Sarah. She doesn't have to invent all the pieces of getting friends to commit to the rally. In Facebook and other platforms, people need only to click a few buttons and they are finished; the automation makes it simple for people to both extend and accept invitations.

Simplicity is important in persuasion. As humans we have a natural human drive to conserve resources (in other words, we are lazy). If a task seems simple to us – like clicking the mouse once or twice – we are likely to do the task right away. When

tasks are complex or have multiple steps, we are more likely to avoid the task or procrastinate.

To reiterate, software code structures and automates the experience, which delivers an experience with fidelity; it also simplifies the work for people promoting the experience.

4.3 Social Distribution

The first two components – persuasive experience and automated structure – have come together before. This combination is the basis of my early work at Stanford in captology, where I demonstrated that computers could reliably change beliefs and behaviors. So this combination is not new. What became new in 2007 was the combination of the six components for MIP, including making it easy for friends to involve other friends in an automated persuasive experience. With social networks in place, one friend can invite another friend to join the persuasive experience. The process then repeats, with the new friends involving their friends.

For example, suppose my friend Jeannine invites me to use a Facebook application that will inspire me to practice golf every week. By using this app, I can also invite my own Facebook friends to be part of my golf practice team. So I invite 10 people to use the app. Then some of my friends invite their Facebook friends. In this way, the application gets distributed through social channels.

Social distribution online was possible before Facebook Platform. For example, I could forward an email to a list of friends. But for MIP, distribution within a structured social network, like Facebook or Bebo, seems important and perhaps vital.

First of all, the persuasive experience gains credibility by being inside the walled garden of a high-trust culture like Facebook. Users assume that inside the walled garden any shady persuasive efforts are quickly squashed. Credibility is also boosted by the fact that every action inside Facebook is attached to real user who will get ousted for bad behavior.

Next, social distribution inside a social network makes inviting friends and accepting invitations easier. For example, Facebook users perform familiar behaviors to join a group or add an application. Users don't need to navigate to a new web site, register for a new service, or solve any new technical issue. It's simple.

To reiterate, social networks are important for MIP because they make the persuasive experience more credible and the distribution task simpler than what happens on the open Internet.

4.4 Rapid Cycle

A rapid cycle is another key component in MIP. What this means is that the time between invitation, acceptance, and a subsequent invitation needs to be small. MIP is greatest when the cycle time for getting involved and involving others is shortest.

Rapid cycle time builds momentum and enthusiasm. Not only does the level of involvement grow quickly with a rapid cycle, but the rate of involvement also goes up. Momentum sweeps many people into a movement who may otherwise not get involved.

Consider this example: One day in September 2007, my Facebook Newsfeed showed that seven friends had just joined a Facebook group to support the monks in Burma. I respected these friends so I clicked to learn about the group they joined. I saw the group was growing quickly – 3,000 new people each hour, one blogger later reported[8]. After a few more days, awareness of the Facebook group – and the monks' protests in Burma – seemed to sweep through Facebook. At one point I wondered, "Is there any active Facebook user who doesn't know about this group?"

The rapid growth of the Burmese monk group was directly tied to the rapid cycle Facebook allows. In this case, I became aware of my friends' actions – joining a new group – within hours. Facebook notified me automatically via the Newsfeed; my friends didn't even need to invite me. Facebook also allows a more active role: anyone could invite friends to join the Burmese monk group immediately. This process takes less than five minutes. Either option is a rapid cycle.

In a similar way, the rapid cycle for sharing apps in the Facebook context allowed our students to reach millions of people within a few weeks. Student teams who designed their apps to have a rapid cycle for invitations often saw their user stats rise quickly. Once rapid growth was underway, the student apps then benefited from the momentum created – buzz from bloggers and listing on leader boards.

A slow cycle may lead to growth but it will fail to benefit from momentum. A good case in point is Tivo. Launched in 1999, Tivo offered people a much better way to watch TV. But adoption was slow, in part because the cycle for adoption and social distribution was slow. The more people used Tivo, the more they loved the service. But the process of falling in love and then evangelizing Tivo to friends could take months or years. As a result, Tivo has grown steadily but has never created a wave of momentum that would sweep eager new buyers into stores to demand Tivo. That's possible only with a rapid cycle.

4.5 Huge Social Graph

The previous four components would not lead to MIP if only 100 people belonged to the social network. Yes, you could reach all 100 people within a day, but 100 people is not "mass." An important component of MIP is having a huge social graph—a network of millions of people connected to one another.

Facebook offers a huge social graph, about sixty million at the time of this writing. The network for MySpace is more than twice the size. Both of these social graphs are huge. In the future we can expect bigger playing fields as Facebook and MySpace continue to grow. Even more significant could be new initiatives like OpenSocial and DataPortability, which could soon bring together almost 500 million people in affiliated social graphs[9].

Persuasive experiences of the future will almost certainly be able to jump from one social graph to another. For example, a movement supporting Burmese monks may start in Facebook but then be ported to other social networks such as Bebo and Hi5.

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[8] http://www.allfacebook.com/2007/09/3000-users-per-hour-join-burma-protest-group/

[9] Yahoo currently has the most users of any web service, but they have yet to outline their social networking strategy in a convincing way. If they join the OpenSocial coalition, for example, they would add over 250 million potential users to that network.

The specific companies don't matter much in MIP. What matters is that millions of people are now linked to other people online. These ties are all potential distribution paths. The larger the social graph, the greater the potential reach for MIP.

4.6 Measured Impact

The final component of MIP is measured impact. In other words, people must be able to observe the effects of the intervention. For example, people need to see how many people have joined the group in the last 24 hours, or how many people have installed the app today, or how much money has been raised in the last month. To be clear, I'm not talking about impacts that are *potentially* measurable. This sixth component refers to measurements that are actually reported.

Facebook Platform allows both creators and adopters to see basic statistics on an app's distribution and use. For example, anyone can go to Facebook and see how many people used AppABC yesterday and how many new people installed the app.

Making the statistics available to everyone facilitates MIP in three ways. First of all, those who share the persuasive experience with their friends can get feedback on the success of their efforts. This feedback likely increases the motivation for people sharing the experience. On the receiving side, visibility creates more pressure for the person who is invited. They may want to avoid an awkward situation like this: "Hey, I invited you to support the Burmese monks. You never joined the group. Don't you care about what's going on?"

Social proof is the second way measured impact facilitates MIP. Consider this scenario: When I see that 3 million people use AppABC each day, I have evidence that the app is worth trying. If I don't try the app, I may be missing something important. That's a natural response. The point here is much like I stated earlier: when an experience gains momentum, people take notice and are more likely to join in, even without an explicit invitation from friends.

The third way measured impact facilitates MIP is by helping creators improve their persuasive experience. The creators can test various approaches to the persuasive experience and see which option works best. For example, the leading Facebook app developers today are in a constant cycle of testing and improving. Each hour brings them new information about impact: Which "call to action" gives the highest conversion? What image works best? Which invitation text is most effective? The leading developers improve their applications continuously.

Consider invitation text as an example of testing different approaches. In my own experience of being invited to Top Friends, a leading Facebook app, I saved three different wordings for their invitation.

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Amber Phillips has added you as a Top Friend! Does Amber Phillips
make your Top Friends?

Amber Phillips thinks you are BFFs and would love to be added to
your Top Friends. You should add Amber Phillips as your Top
Friend! ;)

Amber Phillips thinks you are BFFs and would love to be added to
your Top Friends. Please add Amber Phillips today :)
```

Which invitation text works best? I don't know. But the app creators know the answer. Of course, it's unlikely they will share this valuable piece of information. Because the competition is intense, the cycle for improvement is not weeks or days but hours—as fast as they can test options and get data back on user response.

One of the leading apps on Facebook has over 200 measurement points built into the code[10]. They know how long people spend on each screen, what buttons get clicked, how many invitations get sent by new users, and so on. This gives creators a clear view of how people use their app and how modifications affect adoption and use. The two leading app creators for Facebook, companies named Slide and RockYou, have built their own metrics tools because the current Facebook statistics aren't sufficient for their careful testing and observation. In the future, better measurement tools will likely be commonplace, giving all developers more insight into how to improve their creations.

5 Viral Adoption and Mass Interpersonal Persuasion

Now I return to the question I posed earlier: "Is MIP just a fancy way to describe viral adoption?" To answer this question to everyone's satisfaction, we would first need to agree on the meaning of "viral adoption" and related terms like "virality." The fact is that people don't agree on the definitions; the meaning has been debated since the phrase "viral marketing" first appeared in 1996. As a result, no answer to this question will satisfy everyone. With that caveat, I will offer an answer that I hope satisfies most people.

First of all, most people would probably agree that viral adoption involves distribution through social ties. Next, an experience that leads to successful viral adoption will have some persuasive elements. So in these two areas – social distribution and persuasive experience – virality and MIP share common ground. But the other four components of MIP are not necessarily required for how most people define viral adoption. In other words, viral adoption can happen without an automated structure, a huge social graph, a rapid cycle, or measured impact. In contrast, MIP requires these four components.

6 Comparisons to Mass Interpersonal Persuasion

As I explained above, MIP emerged because six components came together for the first time in a single system. The individual components are not new. In fact, some of the most successful persuasion modes have combined some of the components. Table 1 shows how familiar genres use some of the six components.

Gossip and urban legends are genres of communication that usually have persuasive intent. While gossip and urban legends are socially distributed – shared from one friend to another – at least two components of MIP are lacking: no automated structure and no measured impact.

[10] The lead developer for this popular app said I could share this information, but he didn't want me to name the app or the company.

Table 1. Various genres include components of MIP

	Persuasive Experience	Automated Structure	Social Distribution	Rapid Cycle	Huge Social Graph	Measured Impact
Gossip & Urban Legends	Yes	No	Yes	Yes, sometimes	Sometimes	No
Chain Letters via Postal Mail	Sometimes	No. But prescribed steps give structure.	Yes	No	Yes	No
Networking Marketing	Yes	No. But prescribed steps give structure.	Yes	Sometimes	Yes	Partially
Forwarding to Email Lists	Often yes	No	Yes	Yes	Yes	No
Software Virus	Usually no	Yes	Yes, but not intentionally	Sometimes	Yes	Not typically

Chain letters sometimes have a persuasive intent. If nothing else, the letter is designed to motivate people to continue the chain. The letters are distributed socially and they could reach everyone in a country or the world, giving them a huge social graph as the audience. Chain letters usually include careful instructions, giving the experience structure. But the experience is not automated. It requires effort. Chain letters do not have a rapid cycle and no measured impact.

Network marketing is a term I'll use to describe the process of selling to friends and, even more important, recruiting friends to be part of your sales organization. Successful network marketing efforts are much like chain letters: The experience is structured, distributed socially, and could ostensibly reach millions of people. For example, my sister once learned about a new vitamin from her friend. These vitamins weren't available in stores. My sister could buy vitamins only from her friend. But her friend had a better offer: By becoming a distributor, my sister could get a discount on vitamins and potentially make money. She signed up. She became part of her friend's sales organization. Then the cycle began again. As one might expected, my sister shared the vitamins with me. (By the way, I did not sign up to sell vitamins.)

Note that recruiting new people into networking marketing usually takes days or weeks, which is not a rapid cycle. Also note that the impact is not observable by everyone, only a handful with access to the data (which leaders carefully filter and share). Even so, network marketing has many components of MIP so it's not surprising that many such companies have succeeded.

Finally, the persuasion genre that is closest to having all six components in MIP is forwarding to email lists. We've all experienced this. A friend sends us an email and urges us to pass it along to all our friends. Many ideas and causes have been promoted in this way. Forwarding email campaigns have most components of MIP except the

structure is not automated and the impact is not measured. One could also argue that this genre lacks an important quality of social distribution that I explained earlier: credibility.

7 What's *not* Important in Mass Interpersonal Persuasion

So far I've explained the new phenomenon of MIP by providing brief examples, explaining the six components, and comparing MIP to familiar persuasion genres. In this section I hope to further clarify MIP by pointing out what does *not* matter in this new phenomenon.

First, the **technology** used does not determine what is, or is not, MIP. Today, Facebook is the most likely technology platform, but in the future, we can expect MIP to play out on mobile devices or on the screen in our living rooms. Looking to the future, there may be a way that MIP occurs without even using computing technology.

Could a biological virus be created and distributed with an intent to change attitudes or behaviors? Right now this seems a chilling scenario involving terrorism, but it's not impossible that at some future point, spreading a biological agent would be a responsible act of public health.

The second point is that the **topic** doesn't determine if something is or is not MIP. In my work and my lab, we focus on topics that benefit people, motivating them toward better health, more responsible environmental behavior, and so on. But the persuasive intent could be frivolous or it could be downright evil.

The last point is that the **initial intent** of the creator may not matter much when it comes to MIP. In my previous work in captology, I've argued that a "persuasive technology" is defined largely by the creator's intent. At the time I also said that distributors can also have intent, but this was a minor point. Now, with the emergence of MIP, the intent of the distributors can be important, especially when the creator did not intend to persuade in the same way. As an analogy, consider how a video on YouTube can take on a life of its own, different than what the creator intended.

8 The Future of Mass Interpersonal Persuasion

Mass interpersonal persuasion matters because this new phenomenon gives ordinary individuals the ability to reach and influence millions of people. This is new. Over the past century, mass media has been the primary channel for persuasion. These channels were controlled by powerful people and organizations. They used mass media largely to achieve their own goals. Now, the landscape is changing.

I believe the power to persuade will continue to become less centralized, thanks to MIP. For early evidence of decentralization, we can see how much impact ordinary individuals have had with blogs and online videos. This is just the beginning. Individuals will have even more impact in the world as we continue creating tools that enable MIP. We are at the start of a revolution in how individuals and cultures make decisions and take action.

If human nature were fundamentally bad, I would be worried about MIP. Certainly, this new power could have a dark side. But I believe we humans are fundamentally good. I believe that, for the most part, we will create vehicles for MIP that will benefit society—that will enhance education, improve health, and help to bridge national and cultural divides. This democratization of persuasion will lead to far better outcomes than those achieved when persuasion is controlled by a few powerful groups. The power and potential of mass interpersonal persuasion give me hope for the future.

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