

译者按：

偶然的机会认识了自然之友和“比车牛”的一帮朋友，发现他们正在以极少的资金和极大的使命感和热情投身于北京自行车的推广事业中。曾经以为城市规划是崇高的事业，只有规划师才可以为民请命，其实不然，广大人民才是城市真正的主人。希望规划师多关注人的需求，关注民间草根组织在为城市做出怎样的努力；换个角度看城市，换种身份思考问题。或许我们应该与他们一道并肩作战，这才是公众参与的真正内涵。

北京自行车的回归之路

Shannon Bufton and Florian Lorenz (翻译：张颖)



北京生锈的破自行车 (Shannon Bufton 摄影)

概论

曾几何时，现在看似卑微的自行车却是城市最主要的交通工具。也许还曾经有人说北京是世界最好的自行车之城。可是如今，为了追求现代化发展，这座城市似乎把自行车抛弃了。

不可逆转的城市重构和现代交通系统的快速发展（特别是私人小汽车的发展）已经给城市带来了一系列复杂的难题和压力，如可持续发展、空气质量、健康和交通拥堵等。

在全球应对气候变化的时代，每个城市都有必要开始运用可持续的手段来解决城市交通问题。对大城市而言，这点尤为重要。也正因如此，世界上的许多城市开始了自行车的复兴运动，骑自行车有助于创造一个环境、经济和社会效应上都可持续的城市。

北京——一个有着悠久自行车历史的城市，为什么在这场自行车复兴运动中显得并不那么热衷呢？

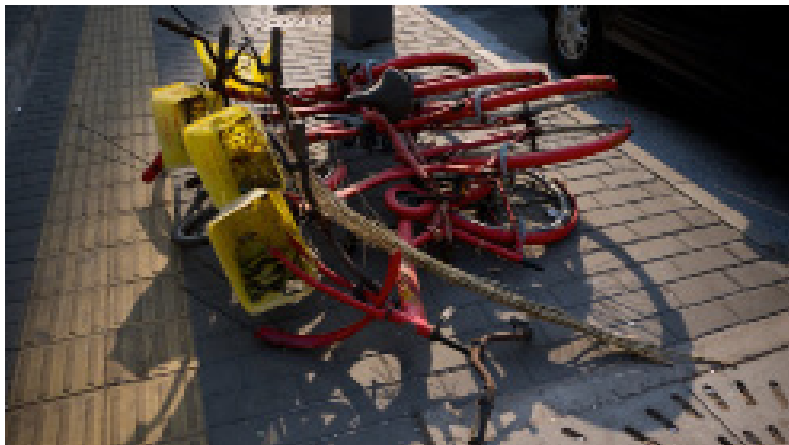
世界上一些有前瞻性的城市，如纽约、哥本哈根和伦敦，最近都表示支持自行车出行是一种重要且成功的城市规划策略，这种策略可以帮助城市减少拥堵，促进低碳交通的发展。也许北京也应该考虑重新把自行车作为解决交通和污染问题的手段。



自行车衰微的历程

中国第一个五年计划里就已经提出要把自行车产业提升60%。自1958年起，中国自行车年增长量超过一百万辆。20世纪50~80年代，自行车是最普遍的交通工具，中国城市在世界范围内是公认的非机动交通领跑者。这个时期自行车是最合适的代步工具，居住、工作、娱乐、购物等设施都布局在步行和骑行的范围内。随着改革开放政策的推行，私有企业的发展、城市的扩张和土地利用规划都得到大力推广，原有小范围（人性尺度）职住平衡的城市结构被彻底改变。公众对自行车的热情被机动车所取代。“八五”计划时期，汽车产业作为经济发展的主要动力得到大力发展，汽车销量逐渐攀升。与此同时，相关的政策都在鼓励小汽车发展和城市扩张，城市道路空间有限，却要承载多种相关的基础设施和服务。在已有道路空间内，如何让各种交通方式发挥最大的价值，其实是一种折中（难全）的策略：一方面，小汽车作为道路空间最低效的使用者，在经济层面有强大的诱因推动其发展；另一方面，又要考虑如何让大量扩张的城市人口（无车族）有效地快速移动。中国的许多城市尝试过在私人小汽车的低承载力和公共交通的高承载力之间寻找平衡。而自行车和步行，作为道路使用者的大多数，却被作为次要选择，原因是这两种交通方式都被看成弱势，不能像机动交通一样能很好地运作。小汽车和公共交通在争夺有限的道路资源，而卑微的自行车却被遗弃，没有被认真考虑为道路交通方式多样性中重要的一份子。北京有许多街道被拓宽，而自行车和步行道则被侵占。

影响中国自行车文化衰微的最大因素可能是对现代交通工具（如小汽车）的狂热，以及对个人财富的炫耀和现代生活方式的标榜。普遍的观点认为，自行车是过去式，是不入流的交通工具，只有买不起小汽车的人才会骑自行车。因而，自行车的使用率从1986年的63%下降到2009年的18%。



小汽车和公共交通在争夺有限的道路资源，而卑微的自行车却被遗弃（Florian Lorenz 摄影）



公共交通发展陷入“瓶颈期”

2006年，北京机动车的道路占用率为77%。那时有人预测，道路的建设跟不上汽车发展的需求。2010年，北京的交通拥堵达到历史新高，在世界“IBM通勤之苦指数”的评比中，北京与墨西哥城并列为交通状况最差的城市。在赢得奥运会的举办权后，63.8亿的资金投入了轨道交通的建设，在奥运会召开前，6条新的轨道线开通，轨道交通总长为300公里，预计2020年轨道交通总长将达到1000公里。

北京政府对公共交通建设的承诺和投资让人佩服，这种举动也为将来的可持续发展奠定了良好的基础。然而，这些努力显得有点滞后，因为北京使用私人小汽车的强势文化已经形成。根据2008年的北京居民出行调查结果，公共交通出行时间比小汽车多26.4分钟，但想要人们从舒适方便的私人小汽车出行改为公共交通出行是完全没有说服力的。还应该注意，由于出行需求巨大，一些轨道线在开通仅6个月后就饱和了。



北京的很多道路被拓宽以容纳更多的机动车

2010年底，北京政府出台限购令，把每年道路新增车辆数控制在24万。这些举措虽有可取之处，但同时也为公共交通系统带来了压力，已经饱和的公共交通难以吸收限购令下从私人小汽车转移到公共交通上的需求，发展陷入瓶颈。



倡导自行车出行的好时机

在公共交通发展完善之前，北京的通勤者们将持续忍受着过度拥挤的公共交通和拥堵的道路状况。基于限购令，一些私人小汽车的潜在使用者将分流到其他交通出行方式。这是一个提倡和支持自行车作为他们备选交通出行方式的绝好时机，原因有以下几方面。

（一）出行时间

在拥堵的城市里，由于自行车的灵活性和小尺度，其移动速度与其他机动交通相比很有竞争力。虽然北京的自行车道有各种障碍，我们还是经常可以看到在上下班高峰时期繁忙的道路上，骑车者们轻而易举地超越了小汽车。根据北京2010年的交通年度报告显示，自行车的出行速度与公共交通出行的速度不相上下。从表1可以看出，自行车

在早高峰的平均出行速度为7.7公里/小时，只比公共交通的速度慢0.3公里/小时。公共交通的速度不是一般的慢，特别是考虑到国际标准的平均步行速度为4公里/小时。而“比车牛”做的实验式调查则显示，在早高峰时间的自行车平均出行速度接近14公里/小时。调查是采用现代的、性能良好的自行车上安装GPS系统用以记录骑行速度。这个骑行速度大致与地铁行驶速度相当，是公共汽车速度的两倍，并且很接近

市中心小汽车的行驶速度。有证据表明，1995年上海由于公共汽车的效率低下，乘客纷纷转向小公共、出租车、电动自行车，最后回归了自行车，因为与其他交通方式相比，自行车在点到点的出行时间上更具竞争力。

在面对公共交通的等待和换乘时间及小汽车的拥堵双重困境下，在高峰时间骑上一辆现代的自行车确实跟其他交通方式的速度差不多，甚至是比他们快。

（二）方便与高效

随着北京的拥堵和机动车设施的扩张（如停车场），小汽车这种“方便”背后需要的设施越来越成问题，特别是在高峰时期。发达国家城市研究者们都越来越意识到机动车过量使用与城市发展之间存在固有的矛盾。在某个临界点，机动车提供的将不是机动性而是不动性，而且是以几何级数地发挥作用。在北京，找地方停车要靠运气，在狭窄的胡同里穿行要靠高超的技术，在路边停车接人或装东西也困难重重，这些问题已经给机动车的便利性大打了折扣。

反观自行车，则在城市中心地段为我们带来实在的移动性。作为一种穿梭在城市中的狭窄交通工具，自行车为自由通行提供了多种可能性，可以在窄的街道、后巷和公共停车场内抄近道，可以从点到点无缝出行，还可以节约到处找停车位的时间。在哥本哈根，有55%左右的居民每天骑自行车上班或者上学，而选择自行车作为出行方式最主要的原因则是自行车的便利性和速度。在北京，自行车为打破机动车交通流死板的格局提供了可能性，创造了短距离出行的更大便利。

（三）个人空间与舒适度

在一定时间内，公共交通使用者依然要承受着拥挤带来的不适，在有限乘车空间内被迫与其他乘客发生身体的接触、挤压和推搡，为出行带来额外的压力、不适和尴尬。而自行车出行则更有个人的空间和更能自由移动，为出行带来更愉悦的精神享受。

（四）费用

小汽车的年均停车费为1579元，年均保养费为2293元，而骑自行车则基本不产生任何费用。即便北京自行车失窃是个问题，那不开车省下来的钱也足够每年多买3~4辆新自行车。

假如北京推行政策支持自行车出行，自行车出行的道路环境得到改善，大量的通勤者很有可能做出理性的选择，选择自行车这种出行方式，而且特别能吸引那些住在旧城里，出行距离小于6公里的人们。自行车作为一种交通方式，并不可能完全解决北京城市交通问题，可它确实是均衡和持续发展的多元城市移动系统内一个重要的元素，为城市居民的日常出行提供了一种和谐的选择。

自行车可以充当不同公共交通方式之间的粘合剂，也可以在市中心内作为一种独立、有效、实用的交通方式。小汽车的使用给环境带来了负担，而公共交通的发展又相对昂贵，这之间确实存在一个发展的空档。在推崇现代和技术的解决方案中，自行车经常被忽视。也许现在该是时候重新提倡自行车了，是时候把资源和精力放在推广自行车的策略上了。

表1 北京交通高峰时段车辆平均出行速度比较

出行模式	上午7.00~8.00	下午17.00~18.00
自行车	7.7公里/小时	7.1公里/小时
公交车	8.0公里/小时	7.9公里/小时
小汽车	17.8公里/小时	18.1公里/小时
地铁	13.0公里/小时	14.2公里/小时
步行	4.0公里/小时	4.2公里/小时



作为一种穿梭在狭窄城市中交通工具，自行车为自由通行提供了多种可能性（Florian Lorenz 摄影）



在哥本哈根，选择自行车出行最主要的原因是它的便利性和速度（冯斐菲 摄影）



是时候把资源和精力放在推广自行车的策略上了



自行车作为一种交通方式，为城市居民的日常出行提供了一种和谐的选择（Shannon Bufton 摄影）



自行车在纽约的积极影响和得到的大力支持

美国的城市交通环境被公认为以小汽车为重。但纽约的自行车交通在过去十年间得到了长足发展。

在美国，自行车的出行比例从1997年的0.6%上升到了2009年的1%，这部分增长主要发生在大城市的中心地区，尤其是在雅皮士社区，越来越多的中年人开始骑自行车。美国骑车的大部分都是白种人，而非洲裔、西班牙裔、亚裔的北美人也越来越多加入到骑车的行列。在对骑车者收入水平进行分析中发现，各种收入阶层的人骑车比例几乎持平，收入最低的占29%，收入最高的占24%，介乎中间的则是21%和26%。由此可见，对美国民众整体而言，自行车已经越来越成为一种吸引人的交通方式，这种趋势不仅局限在美国穷人中。

美国大城市中，有些先锋城市还有着很高的自行车通勤比例。例如，俄勒冈州的波特兰，自行车通勤上班的比例从1990年的1.1%上升至2009年的5.8%，这个比例甚至超过了欧洲的城市（维也纳在2005年的自行车出行率是5%）。这表明政策和城市规划的支持可以有效地提高自行车的出行率。

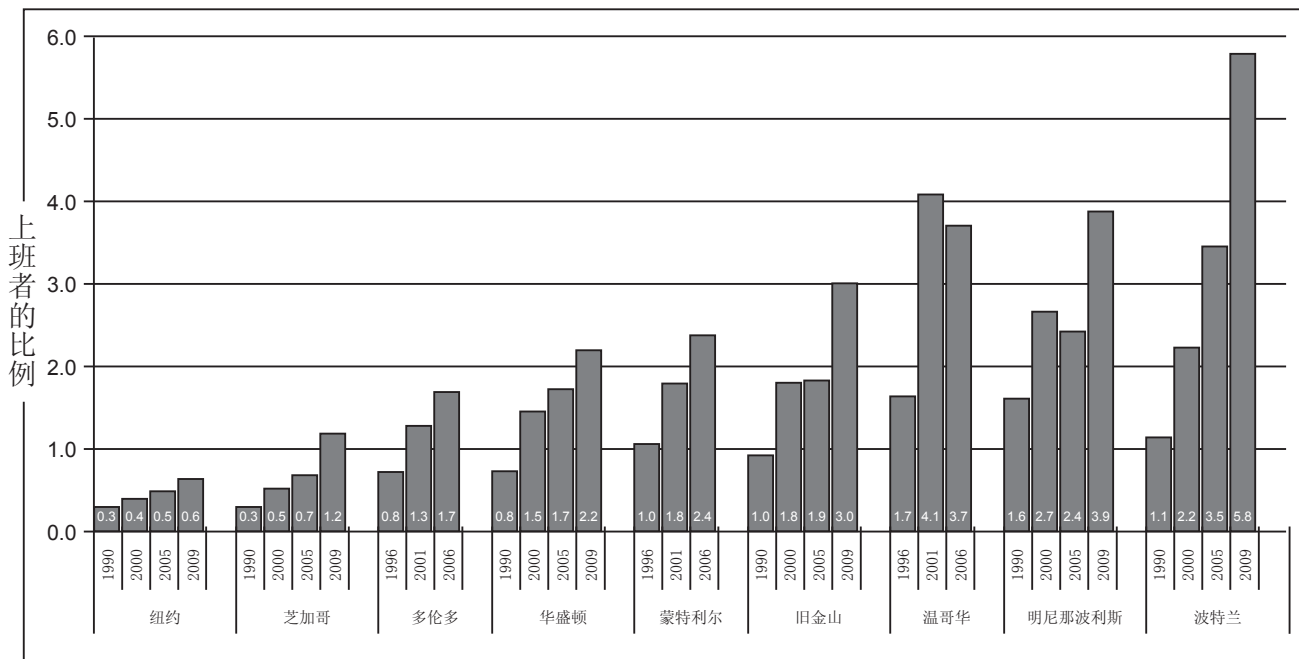
在这种大环境下，我们有意选取纽约作为研究对象，它在过去十年致力变成一个自行车友好城市，而且已经产生了积极的效果。我们以纽约为例是因为这是一个全球的先锋城市，一切的创新都会在这个城市范围内得到发展和尝试。这种意义上，对其他打算发展相似策略的城市而言，纽约的案例可能是重要的借鉴。

纽约的骑车人口包括通勤和其他目的出行，自20世纪90年代以来一直稳步攀升。1980~2008年，纽约的自行车出行增长了153%；2000~2010年，自行车通勤人口增长多于3倍(表2)。



纽约自行车设施 (Florian Lorenz 摄影)

表2 1990~2009年北美各大城市骑车上班者的比例及趋势 (来源：加拿大统计局)





纽约布鲁克林大桥入口处自行车标识 (Florian Lorenz 摄影)

纽约的例子中最重要的因素是政府的大力支持，在90年代末，政府已经觉察到自行车是个人移动交通和公共交通系统中的重要元素。1997年的《纽约城市自行车总体规划》是把自行车列入整个城市交通体系的开始，这个规划是“自行车网络发展项目”的产品，这个项目由“缓解空气质量计划”资助的。由此表明，对自行车政策的支持源于提升城市环境质量的目标。

自从纽约市长Michael Bloomberg根据“纽约规划”的战略性文件，要把纽约发展为绿色城市以来，纽约市支持自行车的立场十分明确。这个战略性规划文件于2007年公布，其中特别涵盖了倡导自行车交通的各种行动。2007版的“纽约规划”有三个目标：鼓励全市范围内的自行车增长，完成1800英里的自行车道的总体规划，为自行车提供便利。“纽约规划”确定的是一些具体目标，如让自行车出行到2015年增加1倍，到2020年增加2倍；到2009年建成200公里的自行车道，到2011年新安装5000个自行车架等。与“纽约规划”相比，2008年纽约交通部门发布的一份系列战略规划文件“可持续的街道”强调的则是更宏观的目标。最终，2011年的“纽约规划”（4月份版）正式发布，以策略规划的文件形式加强了对自行车的支持，提出一系列的目标，如让自行车的出行量在2012年比2007年的水平增加1倍，到2017年增加2倍；在纽约城内安装一套自行车共享资源系统。



纽约自行车停放架 (Florian Lorenz 摄影)



纽约街道自行车线 (Florian Lorenz 摄影)



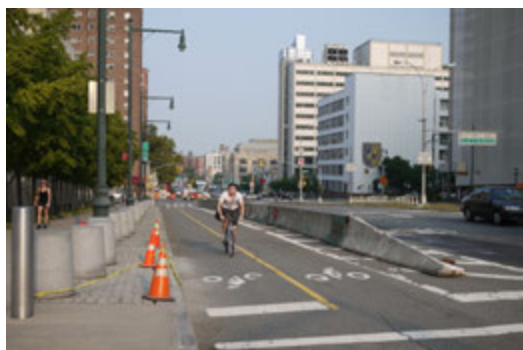
纽约自行车停放处 (Florian Lorenz 摄影)



纽约街道自行车线 (Florian Lorenz 摄影)



纽约自行车行驶线 (Florian Lorenz 摄影)



纽约保护自行车道的设置 (Florian Lorenz 摄影)



纽约布鲁克林大桥自行车标识 (Florian Lorenz 摄影)

上述提到的政策和规划文件促使纽约城在2000~2009年间修建了450公里的自行车道，让纽约的自行车网络从2000年的220公里增至2010年的670公里，相当于3倍的增长。

评判规划是否成功的重要因素是看政策和规划文件中相关指标的数目，同样重要的是看政策背后相关的人为因素。纽约的例子中，支持自行车成功的最主要因素是纽约交通部成立了独立的自行车项目组，全面处理与提升纽约自行车环境相关的规划与事物。

自行车项目组负责纽约的自行车基础设施规划与设计，同时负责通过发起各种公共参与和有教育意义的活动去推广自行车文化，如骑车安全、骑行规则、社区改善等活动。这些创新的、引起公众关注的活动包括：绘制《纽约城自行车地图》，教育人们安全骑行；发起“精明骑行承诺”活动，让人们保证在正确的车道内骑行；“骑车上学”行动教育中学生们如何安全有效地使用自行车。此外，项目组还通过开放统计数据和文献来记录自行车的发展。这个项目还发展出一个特别的“自行车安全指数”，比较自行车出行中事故伤亡人数和总的出行量，该指数表明，2000~2009年纽约自行车出行的伤亡率下降了75%。



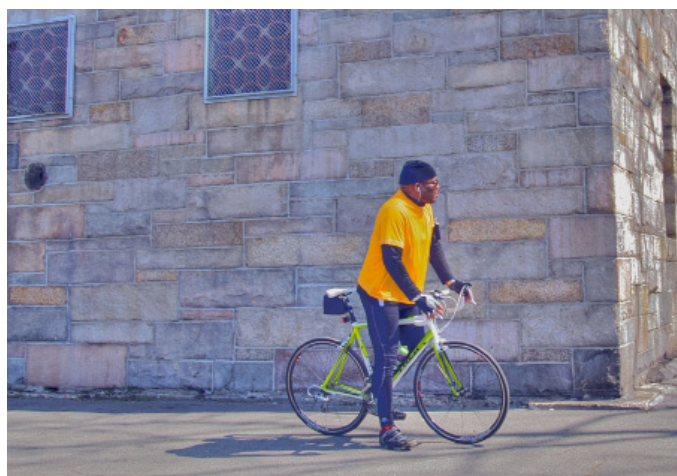
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这个官方项目组的工作受到了致力于推进纽约自行车文化的各个社会组织和非政府组织的一致好评。这个项目的成功来源于官方规划部门之间的配合，并与社会组织合作，朝着共同的目标努力。城市政府、非盈利组织和私人机构之间通力合作的例子有“骑行纽约”和“纽约自行车安全联盟”。纽约的自行车文化还建立在一个网络的支持平台上，可为纽约的骑车者提供地图或者刮蹭的统计，为骑车者营造了一种社区感。

在纽约，自行车在社区范围根植于一个叫“交通选择”的非盈利组织，让自行车作为一种城市工具占据有利的位置。要做到这点，只需要强调自行车三个好处：个体的移动性、社区营造和个人健康。在纽约每年的“全国自行车月”里，人们都在庆祝这种自行车的生活方式和个人的自由。整个五月里，全城充斥着无数的与自行车相关的活动（音乐、艺术、电影、竞技、会议和纯骑行），这种氛围让人们因自行车而聚集在一起。一个重要且非常吸引人的活动叫“五镇骑行”，被称为全美最大的骑行娱乐活动。在2011年，整个活动吸引了3.5万名骑车者一同在纽约的大街小巷和高速公路上骑行了70公里。



纽约五镇骑行活动（资料来源：<http://www.flickr.com/photos/johnia/487601079/sizes/o/in/set-72157600185431439/>）



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纽约的自行车文化同时产生了充满活力的相关文化和科技创新，提升了城市的价值。例如，艺术家David Byrne专门为自行车停车架做了形象设计，还在布鲁克林区发起“社会自行车”活动，致力于发明一个科技创新的自行车共享系统，让使用者更高效和便利地使用自行车。为了要给市民和环境的可持续营造一个创新、宜居、文化多元和健康的城市环境，自行车可以也将成为城市规划和战略规划的一个重要元素。



纽约自行车设施（资料来源：<http://www.flickr.com/photos/jamesbondsv/5148130010/sizes/o/in/photostream/>）



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北京“友好自行车”的未来

纽约的例子表明，城市政府在基础设施建设方面做一些特别的举措和投资就可以成功支持自行车出行和文化。而且，我们发现纽约的城市质量和外在形象受到了政府支持自行车文化政策的正面影响。自行车正逐渐成为吸引中产阶级的一种交通方式，因为它结合了个人移动性、移动自由、在城市内有效出行和健康生活方式多种好处于一体。

在策略层面，北京可以借鉴：支持自行车如何帮助缓解了交通压力，缓解了公共交通和道路的拥堵；自行车如何创造出一种特有的城市文化，在街道层面提升城市的质量和沿街的经济效益。在不同的公共交通中，自行车是一种连接器、粘合剂，在这种前提下，自行车共享系统会为人们提供一种联系移动的服务，同时帮助减缓公共交通的拥堵和减少出行时间。

自行车是一种相对简单、有效和可持续的交通方式。现在正是北京从能源和资源方面发展出一套策略去推广自行车的时机。我们希望激发和支持本土意识和研究、国际文化交流、政策和创新研究等各种与自行车相关的事业。我们可以想象，北京将成为一个充满活力和健康的城市，居民有优质的生活，城市街道有宜人的尺度。而在城市规划和策略中支持自行车发展将是达成这一美好愿景的重要一环。🚲

（本专题参与调研：张颖 唐蜜 寇蕾）



北京骑行者 (Florian Lorenz 摄影)



北京骑行者 (Shannon Bufton 摄影)



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关于“比车牛”：

“比车牛”成立于2010年，推广骑行、自行车生活和保护北京特有自行车文化的一个网络平台。“比车牛”相信，北京的自行车文化正处于一个十字路口，这个城市仍然有高达19%的自行车出行率和大量的自行车，但是其使用功能和地位正在快速下降。如果不立刻采取行动，这种特有的文化将很快消失。而越是在城市发展后期，想要挽回这种局面将面临的难度会越大。创始人相信，新型的自行车文化2.0会在中国诞生，这将不仅能提高北京的宜居性和可持续性，而且会为全球其他城市提供示范，这也与全球的可持续行动密切相关。<http://www.stcbj.com>



北京骑行者 (Shannon Bufton 摄影)



北京骑行者 (Shannon Bufton 摄影)

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Isn't it time to take bicycles seriously again in Beijing ?

Shannon Bufton and Florian Lorenz

The humble bicycle was once the predominant mode of transport in Beijing and it can be argued that the city has previously been one of the best bicycle cities in the world. Now the streets are littered with rusting old bikes and it seems as if Beijing has turned its back on the bicycle in its quest for modernity and evolution. The resultant re-configuration of the city and the rapid speed of development of modern transportation systems (particularly the lightening growth of personal automobiles) have created a complex set of issues and challenges which now put the city under pressure such as sustainability, air quality, health and traffic congestion problems.

In this era of finding solutions to global climate change problems, it will be essential for every city to begin to adopt a more sustainable approach in terms of urban transportation. This is particularly important for big cities. For precisely this reason the bicycle is undergoing a renaissance in many of the smartest cities in the world where cycling is promoted to create environmentally, economically and socially sustainable urban environments. So why is Beijing - a city with a rich bicycle history - seemingly not interested in embracing this renaissance?

Some of the most forward-thinking cities in the world - such as New York, Copenhagen or London - recently demonstrated that an active support of the bicycle as a means of transport can be a vital and successful urban planning strategy for achieving reduced congestion, improved health and low carbon transportation in the city. Such international examples suggest that it may be worth taking the bicycle (again) seriously as a potential solution for some of Beijing's transportation and pollution problems.

What happened to the bicycle in Beijing?

Under Communist rule China quickly established herself as the "Kingdom of the Bicycle". China's first 5 year plan set a target of growing the bicycle industry by 60%. By 1958 China was producing more than a million bikes annually¹. From the 1950's through to the late 1980's the bicycle was the preferred vehicle and Chinese cities were acknowledged world wide as being the leaders in non-motorized transport². The danwei system was prevalent at this time and the bicycle was an appropriate choice for urban mobility. Living, working, entertainment and shopping facilities were all within walking and cycling distance.

When Deng Xiaoping's economic reforms came in the 1980's, the danwei system began to dissolve with greater focus placed on

economic development. Private enterprise, urban expansion and land use reconfiguration were all encouraged. As a result, urban planners started to plan for the spatial reconfiguration of the city. The urban structure of the Chinese city - traditionally balancing living and working on a small (human) scale - was significantly altered. This period marked the beginning of the decline of (public) interest in the bicycle for urban mobility.

By the 1990's, the eighth five-year plan (1991-1995) promoted the automobile industry as one of the key drivers of economic development. Subsequently the sales of automobiles began to boom and at the same time policies supporting automobile use and urban expansion were encouraged. While economic and policy support were forthcoming, Chinese Urban Planners still faced considerable hurdles to create efficient transport systems. Chinese cities had limited existing space for road infrastructure and the required associated auto facilities and services. The prevailing policy at the time was focused on the task of balancing transportation systems within the existing road space. It was a question of compromise and how to balance the system to get the most value out of the existing road space³. By the 1990's China's automobile industry was strongly supported.

There was strong incentive to promote automobiles (the least efficient users of road space) for economic development while giving consideration on how to move the majority of the rapidly expanding urban populations without personal automobiles. Many cities in China attempted to balance the use of the road with very efficient users of capacity (bus transit) with very inefficient users of capacity (personal automobiles). Bicycles and pedestrians, which are (were) the majority of the road users have received secondary treatment as their mode is considered inferior and does not operate well with motorized transportation⁴. The automobile and Public Transit were now fighting for limited road space and the humble bicycle was left to decay and no longer treated as serious part of modal diversity on the road. Many streets in Beijing were widened to create extra car lanes while space for bicycles and pedestrians was constricted.

With China's fast urbanization and the influx of migration into Beijing, the city began to sprawl at a high rate of 50km² per year. As a result, average travel distances increased from 6km in 1986 to 9.3km by 2005, furthering the push towards personal motorized transportation as travel distances were increasingly exceeding the 5 km travel distance which marks the distance to be reached by bicycle in a convenient and efficient way. Potentially the biggest factor in the demise of China's bicycle culture was the fervor for modern transportation vehicles such as motorbikes and automobiles, which demonstrate an individual's wealth and

entry into the modern lifestyle. By default, the bicycle became to symbolize the past and developed a stigma as an outdated transportation vehicle only used by those that couldn't afford motorized transportation. As a consequence, the modal share of the bicycle changed dramatically between the 1980's and the 2000's, from 1986 to 2009 bicycle use in Beijing declined from 63% to 18%⁵.

Based on the strong economic growth targets issued by the Government and the dream of the Chinese people to reach a level of modernity of developed countries the choices made by Urban Planners in relation to the development of the city are understandable. However, the speed, scale and lack of balanced and diversified transportation development are now rearing its ugly head. One clear casualty has been the bicycle - which now offers so much potential to serve the challenges of the coming 30 or more years.

Inevitable traffic congestion and lagging public transportation development

In 2006 car traffic in Beijing occupied 77% of the capacity of the road network. At that time it was predicted that road construction could not increase at a rate to match the growth of car traffic demand⁶. By 2010 Beijing's traffic congestion reached new heights with close to 5 million cars on the road. The city was ranked equally last with Mexico City in the global 'IBM commuter pain index' which measured the cities with the worst traffic conditions⁷.

While Beijing's traffic congestion has been steadily worsening, the city has also invested significantly in public transportation. After winning the right to host the Olympic Games in 2000, RMB 63.8 Billion was invested in subway projects and 6 new lines were opened up before the beginning of the games⁸. The network now has 300km of track in operation and is predicted to expand to 1000km by 2020⁹. The commitment to and investment in public transport is impressive and will go a long way to providing more sustainable transport options into the future. However, this investment has largely come after the investment in road and automobile infrastructure and as a result a strong culture of personal automobile use has developed in Beijing. According to the results of the Beijing 2008 Resident Trip Survey, the average travel time of public transport is 26.4 minutes longer than the private car¹⁰. Convincing citizens to swap the comfort and convenience of the personal car for public transportation is going to be a hard task while public transportation development lags behind.

It should be noted that since 2008 Beijing has opened 6 new subway lines so the gap in travel times between public transport and private car will now be less. Demand has been high - so high in fact that some of the new subway lines reached capacity only after opening for 6 months¹¹. At the end of 2010 the Beijing Government finally imposed some restrictions to limit the number of new cars coming onto the roads each year to 240,000 through a license plate lottery system¹². While this is certainly a welcomed move it's still not a solution to the city's urban transportation woes.

These measures while welcomed will also put extra strain on the public transport system to soak up new mobility demand. In such a bottleneck situation the bicycle may offer distinct advantages as an efficient urban planning and development strategy which can easily be implemented.

The opportunity to promote bikes again.

With overcrowded public transport and some of the most congested roads in the world the traffic situation in Beijing will remain unpleasant for urban commuters until the development of public transportation will eventually catch up. Adding to this the new restrictions on registration of personal automobiles will divert users to other transportation mode. This is a perfect opportunity to promote and support the bicycle as an alternative mode of transportation for the following reasons:

Journey Time

In a congested city the speed of bicycle movement can become competitive with motorized transport due the bicycle's agility and small footprint on the road. Even with all of the obstacles in Beijing's bike lanes it is common to see cyclists easily overtaking cars during peak hour on most busy roads. According to the Beijing Transport Annual Report in 2010 (table 1), the average trip time for bicycle commuters was almost as fast as the time for people traveling by public bus service (only 0.3km/h slower in morning peak hour). The table depicts the average speed of the bicycle in the AM peak hour at 7.7km/h. This value seems very low, especially when you consider that the international average walking speed is around 4 km/h. Anecdotal evidence collected by STC using GPS units attached to bicycles in peak hour traffic indicate that the average speed is closer to 14 km/h. These travel speeds were recorded using a modern, well-maintained bicycle which most likely accounts for the increased average speed. At 14km/h the modern bicycle is roughly equivalent to the speed of the subway, double the bus speed and approaching the speed of the car in the city center. There is evidence for the case of Shanghai that in 1995 inefficiencies in bus transportation shifted passengers to other modes including mini-buses, taxis, motorcycles and back to bicycles as they began to offer more competitive door to door journey times¹³.

The combination of long waiting and transit times on public transport and increasing automobile traffic congestion have created a set of conditions where cycling on a modern bicycle during peak hours is likely to be a faster or at similar speed to other modes of transportation.

Table1. Average speeds during peak hour transportation in Beijing

Mode	7.00~8.00 AM	17.00~18.00 PM
Bicycle	7.7	7.1
Bus	8.0	7.9
Car	17.8	18.1
Subway	13.0	14.2
Walking	4.0	4.2

Mobility and convenience

One of the often stated reasons behind the choice of the automobile for personal mobility is the convenience it provides. With Beijing's chronic congestion and vast, yet expanding automobile facilities (such as parking), the actual convenience of the automobile requires some questioning, especially during peak hours. Observers and urban researchers in developed cities are increasingly recognizing that there is an inherent conflict between excessive automobile use and the city. After a point, as their numbers multiply, automobiles provide not mobility but immobility¹⁴. In Beijing parking space is difficult to find, traveling through narrow hutongs is an arduous task and finding locations to stop on the side of the road to pick up passengers or goods is difficult curbing the convenience and mobility of the car.

The bicycle however provides ultimate mobility in the city center. As a narrow vehicle navigating the city the bicycle has many more possibilities to move freely through space - it can take short cuts through narrow streets, back lanes and public parks. It can transport the rider directly from door to door and minimize the time wasted time finding a parking space.

In Copenhagen where 55% of residents bike to work or school every day the number one reason for cycling is the convenience and speed of the bicycle¹⁵. In Beijing the bicycle offers the opportunity to break free of the rigid structure of automobile traffic flow and offers greater convenience for short trips.

Personal Space / Comfort

While there is overcrowding on public transport passengers will continue to have unpleasant travel experiences. Competing with fellow passengers for limited space involves forced physical contact, pushing, shoving and jostling all of which create extra stress, discomfort and some awkwardness. Traveling by bicycle

allows to maintain personal space and freedom of movement, providing a more enjoyable journey and state of mind.

Cost

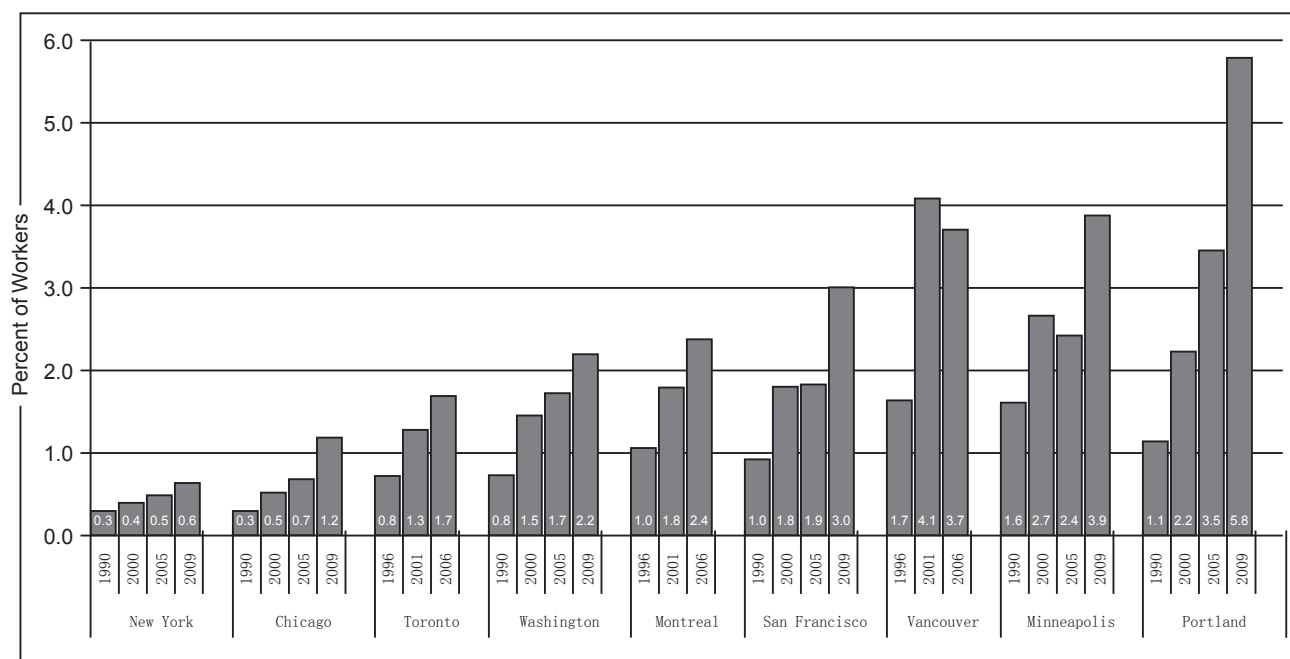
The average annual running costs of an automobile are 10,681 RMB per year. The running costs of a bicycle are virtually nothing. While bicycle theft is a big concern in Beijing the savings generated by bicycle use over car can be as much as the equivalent of having 3 or 4 new bikes stolen every year.

Support for and positive effects of bicycle mobility in New York City, USA

Urban transportation environments in the United States (US) of America can be regarded as one of the most car-friendly and car-dependent environments found in Europe and North America¹⁶. Yet, even in such an environment, transportation by bicycle underwent considerable growth over the past decades. For the US, the share of trips undertaken by bicycle grew from 0.6% in 1997 to 1% in 2009. The major part of this growth in bicycle ridership in the US is attributable to large urban centers, specifically to gentrified, 'hip' neighborhoods where mainly middle-aged men are increasingly using the bicycle.

Cycling populations in the US differentiate by ethnicity with an over-proportion of white Caucasians found in the cycling population, yet African American, Hispanic and Asian North Americans are increasingly riding bicycles. When analyzing bicycle

Table2: Trend in Share of Workers Commuting by Bike in Large North American Cities, 1900-2009. Sources: (Statistics Canada, 1996-2010; USDOC, 1980-2000, 2010a)



ridership according to income levels, ridership is almost evenly distributed among income quartiles, with a slight overhang towards the poorest quartile (29%), and an almost even distribution among second quartile (21%), third quartile (26%) and richest quartile (24%) . Thus the bicycle is increasingly becoming an appealing way of transportation for the general population in the US, not only for poor people. Among the large cities in the US there are several lighthouse cycling cities with high bicycle ridership among trips undertaken to work. For example in Portland, Oregon cycling ridership for work trips rose from 1,1 % in 1990 to 5,8 % in 2009 , which shows that the policy and urban planning support of bicycles can successfully raise bicycle ridership, (also in the US), even exceeding ridership levels a European city such as Vienna (5% modal share in 2005) .

With this more general background, we now want to show the case of New York City, which managed to become a bicycle friendly city over the last decade and the positive effects which developed from that. We focus on New York as this city is globally known for being a lighthouse city where innovations within the urban realm are developed and tested. In this sense, the case of New York may be a crucial test for other cities to develop similar strategies as well.

The population of New Yorkers travelling by bicycle to work and for other purposes has been steadily growing since the early 1990s. Between 1980 and 2008 cycling in New York grew 153% and between 2000 and 2010 commuter cycling within the city has more than tripled . In the case of New York the most important factor was the straightforward support of the bicycle by the city government, which in the late nineties began to see the bicycle as a vital element of the overall system for personal mobility and public transportation.

In 1997 the 'New York City Bicycle Master Plan' marked the onset of New York City's effort to making cycling part of the city's transportation system. It is interesting that the 1997 document was an outcome of the 'Bicycle Network Development Project', which in turn was funded by the 'Congestion Mitigation Air Quality Program' . This shows that initial policy support for improving bicycle mobility stemmed from the goal to raise urban environmental quality. New York's support for bicycle mobility has taken an even stronger stand since NYC mayor Michael Bloomberg pushed for the city to be developed as 'green' city according to the strategic planning document 'PlaNYC', which was firstly released as publicly available document in 2007 and contained initiatives specifically aiming at promotion of bicycle transportation in NYC. The 2007 version of 'PlaNYC' aims to (I) 'pursue strategies to encourage the growth of cycling across the city', (II) 'complete the city's 1,800-mile bike master plan', and to, (III) 'facilitate cycling' .

A subsequent strategic planning document was released in 2008 by NYC's Department of Transportation (NYC DOT), this document - the 'Sustainable Streets – Strategic Plan for the New York City Department of Transportation' – manifests the broader goals from the 'PlaNYC' document in concrete goals such as doubling of bicycle commuter trips by 2015 (and tripling them by 2020), construction of 200 km of bicycle lanes by 2009 or the installation of 5000 new bicycle racks by 2011 . Finally, this year

the 'PlaNYC – Update April 2011' was released which solidifies the support of the bicycle in a strategic planning document and lists the goals of doubling 2007's cycling levels by 2012 (tripling them by 2017) and installing a bike-share system in New York City .

The above mentioned policy directions and planning documents made it possible that New York City built 450 km of new bicycle lanes between 2000 and 2009, which tripled the bicycle network in New York City from 220 km in 2000 to 670 km in 2010. This bicycle infrastructure is built in different qualities; as protected paths, bike lanes and shared routes. In addition to mere bicycle paths innovative measures were put in place such as 'bike boxes' (green street signage at traffic lights which provides a sheltered zone for bicycles) or bicycle-only traffic signals, which made cycling in New York City safer, less risky and visually prominent within the cityscape. Additionally, there were campaigns put in place to provide more bicycle parking spaces on sidewalks and in office buildings.

One important aspect for understanding the success of planning initiatives is to look at the numbers provided by indicators related to policies and planning documents, but even as important as the numbers is to understand the human system behind a successful policy initiative. In the case of New York one major reason for the success of the support of the bicycle is that New York's Department of Transportation (NYCDOT) runs its own office, the NYCDOT bicycle program, which exclusively deals with the support and planning for an improved environment for bicycling in New York City .

The NYCDOT bicycle program is responsible for planning and design of the bicycle infrastructure in New York City and also supports bicycle culture by creating and co-initiating public and educational events and campaigns for bicycle related issues such as safety considerations, traffic behavior and community-based improvement of bicycle infrastructure. Some innovative public awareness campaigns initiated and managed by NYCDOT bicycle program are the production of bicycle maps of NYC and guides to educate people for safer cycling, the 'bike-smart pledge' for people to promise to bike in a correct way or the 'bike-to-school program' which educates children in the secondary school level how to safely and efficiently use bicycles. In addition, the NYCDOT bicycle program also documents the development and rising importance of the bicycle within New York City by providing publicly available statistical documentation . The program developed a specific 'bicycle safety indicator' which compares bicycle-related injuries and fatalities to ridership statistics in New York City. This indicator shows a 75% decrease from 2000 to 2009 for the average risk of getting seriously injured when travelling by bicycle in New York City . The work of the official NYCDOT bicycle program is complemented by society-initiated groups and NGOs which aim at improving the bicycle culture in New York City. One major milestone for the success of the city's support for bicycles has been that the official planning departments are cooperating with each other and with society-based groups towards a common goal, rather than seeing each other as hindrances (as has happened before the strong political embracement of the bicycle by the city government). Examples of such collaborative initiatives between

city government, non-profit organizations and the private sector are 'Bike New York' or the 'NYC Bicycle Safety Coalition'.

New York's bicycle culture has also built up a supportive array of web-based resources which aid bicyclists in New York City by providing maps or crash statistics and which create a sense of community within the cyclists in New York City. In New York City the bicycle is deeply rooted in the community with one major non-profit organization 'Transportation Alternatives' being a hub for organizing and ideating campaigns, initiatives and events which further position the bicycle in New York as an urban tool which – to mention only three positive effects - provides individual mobility, community building and personal health at the same time. In New York City this bicycle-related lifestyle and individual freedom is every year celebrated during the 'National Bike Month'. During the month of May numerous events (music, art, film, competitions, conferences or rides) all over the city relate to the bicycle and create an atmosphere of people coming together under reign of the bicycle. One major and very impressive event is the 'Five Borough Bike Tour', considered to be the biggest recreational cycling event in the US, which brought together about 35000 cyclists in 2011 to cycle a tour through all of New York City on 70 km of closed-down streets, bridges and highways. New York City shows one more aspect of the bicycle culture, namely the bicycle culture creating a vibrant culture and technological innovation which contribute to the cultural and economic life and value of a city. One example of how bicycle related culture can aid to urban life and quality are the bicycle racks designed by the artist David Byrne. Another technological innovation stemming from and related to the bicycle is the technology start-up 'Social Bicycle' (SoBi) in Brooklyn, New York, which aims at making bike share systems far more cost-effective and easier to handle for the user.

The case of New York shows in our understanding that the bicycle can and will be an important aspect for urban planning and strategic city planning in order to create urban environments which are innovative, livable, culturally diverse, healthy for the citizens and environmentally sustainable. In the next paragraph we will discuss specific ideas which can be drawn from the case of New York and the research of Smarter Than Car in Beijing.


A bicycle friendly future for Beijing

The case of New York demonstrates that a City's government can successfully support bicycle ridership and culture by specific initiatives and investment in infrastructure construction. Moreover we find that New York's urban quality and outward image was positively influenced by the support of bicycle culture. The case of the US and NYC demonstrates as well that the bicycle is increasingly becoming a mode of transport which is attractive for middle-class individuals which want to marry individual mobility with freedom of movement, efficient travelling within the city and healthy lifestyle. On a strategic planning level, the case of new York City can be an example for Beijing of how the support of bicycle mobility helps to alleviate traffic problems such as congestion of public transport and roads and how the bicycle can be a way to create a unique culture within a city and lead to improved urban quality and

economic conditions for street level storefronts.

If favorable policies towards cycling were developed in Beijing and the conditions for cycling improved on the streets there is a good chance that a large number of commuters will take the logical action to move to this form of transportation. The bicycle would be particularly appealing to those living within the inner city and for trips shorter than 6 km.

Bicycle transportation is not a total solution for Beijing's urban mobility woes; however it is an essential element in a balanced and sustainable diverse urban mobility system which provides citizens with a balanced choice for their daily travels. The bicycle can be the connector, or glue, between varying modes of public transport and it is also an efficient and practical way of moving around in the center of the city. In such a context a bicycle sharing system would provide people such a connective mobility service and at the same time help to reduce congestion in public transport and overall travelling times within the city.

Automobile use produces a heavy toll on the environment and public transportation development is expensive and has a considerable development lag period. The bicycle is a relatively simple, extremely cost effective and sustainable transportation mode which can ease the pressure on Beijing's other transportation systems. Despite such advantages, the bicycle is often overlooked by planners as a serious component of urban transportation in favor of so called 'modern' or technological solutions. Now is the time to focus energy and resources towards a strategy to promote the bicycle in Beijing again. With our work, STC wants to inspire and support such an undertaking by means of local awareness building and research and international cultural exchange and policy as well as innovation research. For Beijing we imagine a vibrant, healthy city which offers excellent quality of life for residents, also in a human scale on the street level. The support of the bicycle by urban planning and strategic urban planning documents is for sure an important element for reaching such a goal. 

(Research : 张颖, 唐蜜, 寇蕾)

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About STC :

STC was set up in 2010 as a platform for promoting cycling, the bicycle life and preserving Beijing's unique cycling culture.

STC believes that bicycle culture in Beijing is at a cross roads. The city still has a high ridership rate (19%) and bicycles are still in abundance but their use and status is declining rapidly.

If urgent action doesn't occur soon the culture could become completely extinct which would make it significantly more difficult to resurrect at a later period in the city's development.

Our long term aims are quite ambitious, the founders believe a new bicycle 2.0 culture can be created in China and that this is of great worth in not only improving the livability and sustainability in Beijing but providing a model for other Chinese cities to follow - which is of relevance to the global sustainability movement.

STC regularly organizes social rides, lectures and other events. We also work with a range of partners to provide information about cycling in Beijing.

Reference and Notes:

- 1 Terhi Mikkolainen, Radio86.com, <http://en.radio86.com/chinese-culture/short-history-bicycles-china>, accessed July 2011
- 2 Mohammad Shahinur Rahman, Towards Sustainable Urban Transportation System in China : Issue & Challenges, 3rd CPN Conference, Beijing 2006
- 3 Mohammad Shahinur Rahman, Towards Sustainable Urban Transportation System in China : Issue & Challenges, 3rd CPN Conference, Beijing 2006
- 4 Chris Cherry, China's Urban Transportation System: Issues and Policies Facing Cities http://www.airparkvillage.com/beyondoilusa/news/china_transport.pdf accessed July 2011
- 5 Beijing Transportation Research Centre, Beijing Transport Annual Report 2010, Beijing, 2010.
- 6 Loukopoulos, P., Jakobsson, C., Gaerling, T. et al., 2006. Understanding the process of adaptation to car-use reduction goals. Transportation Research Part F 9(2), 115-127.
- 7 IBM, IBM commuter pain survey, <http://www-03.ibm.com/press/us/en/pressrelease/32017.wss> accessed July 2011
- 8 Wikipedia, http://en.wikipedia.org/wiki/Beijing_Subway accessed July 2011
- 9 中国新闻网, <http://www.chinanews.com/auto/2010/12-30/2758163.shtml> accessed July 2011
- 10 Forecasting the Effect of PTP Policy on Changes of Travel Patterns with Ordered Logit Model
- 11 http://www.chinadaily.com.cn/cndy/2011-05/25/content_12573320.htm
- 12 LOUISA LIM, NPR, <http://www.npr.org/2011/01/26/133231061/license-plate-lottery-meant-to-curb-beijing-traffic> accessed July 2011
- 13 Mohammad Shahinur Rahman, Towards Sustainable Urban Transportation System in China : Issue & Challenges, 3rd CPN Conference, Beijing 2006
- 14 Molly O' Meara, Reinventing Cities for People and the Planet, World-watch Paper 147 (Washington, DC: Worldwatch Institute, June 1999), pp. 14-15; U.N. Population Division, op. cit. note 2, pp. 8-10; U.N. Population Division, World Population Prospects: The 2008 Revision Population Database, electronic database, at esa.un.org/unpp, updated 11 March 2009.
- 15 <http://www.chinal22.com/xinwen/201006121140.html>
- 16 'Car-dependent' and 'car-friendly' refer to a culture of planning and policy approaches which favor the automobile over non-motorized mobility. Compare: www.nytimes.com/2011/06/27/science/earth/27traffic.html?_r=3&pagewanted=1&hp
- 17 Pucher, J., Buehler, R., Seinen, M., 2011. Bicycling renaissance in North America? An update and re-appraisal of cycling trends and policies. Transportation Research Part A (45) 451-475.
- 18 Ibid.
- 19 Ibid.
- 20 Ibid.
- 21 Ibid.
- 22 Bundesministerium für Verkehr Innovation und Technologie. Der Radverkehr in Zahlen. Wien 2010. Available at: <http://www.bmvit.gv.at/verkehr/ohnemotor/riz.html>
- 23 Pucher, J., Thorwaldson, L., Buehler, R., Klein, N., 2010. Cycling in New York: Innovative Policies at the Urban Frontier. World transport Policy and Practice. (16) summer 2010, forthcoming.
- 24 The City of New York. Mayor's Office of Long-Term Planning&Sustainability. 2011. PlaNYC Update 2011. Available at: <http://www.nyc.gov/html/planyc2030/html/publications/publications.shtml>
- 25 See: <http://www.nyc.gov/html/dcp/html/bike/mp.shtml>
- 26 The quotes here refer to the document firstly published in 2007 and the initiative number nine in the transportation chapter (p.87). Document available at: <http://www.nyc.gov/html/planyc2030/html/publications/publications.shtml>
- 27 See: <http://www.nyc.gov/html/dot/html/about/stratplan.shtml>
- 28 The City of New York. Mayor's Office of Long-Term Planning&Sustainability. 2011. PlaNYC Update 2011. Available at: <http://www.nyc.gov/html/planyc2030/html/publications/publications.shtml>
- 29 See: <http://www.nyc.gov/html/dot/html/bicyclists/bikemain.shtml>
- 30 Bicycle statistics and safety indicator are publicly available at: <http://www.nyc.gov/html/dot/html/bicyclists/bikestats.shtml>
- 31 Ibid.
- 32 See: <http://www.bikenewyork.org/>
- 33 See: http://www.nyc.gov/html/look/html/about/about_us.shtml
- 34 See: <http://www.nycbikemaps.com/>
- 35 See: <http://www.crashstat.org/>
- 36 See: <http://www.transalt.org/>
- 37 See: <http://www.bikemonthnyc.org/>
- 38 http://en.wikipedia.org/wiki/Five_Boro_Bike_Tour
- 39 See: <http://cityroom.blogs.nytimes.com/2008/08/19/new-bike-racks-courtesy-of-david-byrne/?hp>
- 40 See: <http://socialbicycles.com/>

自行车出行，路在何方？

“自然之友”可持续交通议题组

每一个生活、工作在北京的人，都不难体会到北京的堵。拥堵已经不仅深深困扰着北京、上海、广州这几个大城市，而且正在全国范围内弥散开来，越来越多的二三线城市也加入到拥堵城市的行列。拥堵话题的火爆引发了公众对城市交通的强烈关注。另外，在全球能源危机，国家发展低碳经济、建设低碳城市的宏观背景下，社会各界对建设城市慢行系统的呼声越来越高，步行和自行车出行又重新进入人们的视野。对于自行车出行这个问题，民间环保NGO“自然之友”已经持续积极地关注和推动多年。

“自然之友”是北京市“无车日”最早的倡导者之一，对宜居城市、可持续交通议题持续积极地探索、实践、建言献策，努力搭建市民和政府沟通的平台。2005年起，相继发起了“骑行北京”“低碳出行-健康骑行”“自行车爱北京”等活动；2006年曾通过北京“两会”建议完善北京市自行车交通规划，呼吁“重视自行车路权”；2008~2009年，结合公众绘制社区“绿地图”的活动，邀请志愿者标注最适合骑行的“五星级”路段，让低碳出行更具环境与人文的深度，进而让更多市民能参与行动；2009年12月，向公众收集意见，并向北京市发改委提交了《绿色北京行动计划（2010~2012年）》（征求意见稿）的意见书，对发展“慢行交通系统”等提出可行性的建议；2010年下半年，有感于当时北京公共自行车租赁的发展困境，组织志愿者对地铁沿线自行车停车场及租赁系统，以及沿途自行车道路状况做了长达半年的现场深入调查，并向社会发布了调查报告（详见自然之友《宜居北京骑步走》调研报告，<http://green.sohu.com/20100917/n275010737.shtml>）；2011年正式成立可持续交通议题小组，希望将城市交通对环境影响关联的研究和讨论引入更加深入、广泛、专业的层面。

自行车交通是“宜居城市”的理性选择

“自然之友”大力推动自行车交通的宗旨，不是为了夸大自行车交通环保、低碳的意义，以贬低其他相对高碳的交通方式；也不想设置一个道德的标准，鼓励大家为了环保、低碳，不论天气和出行距离、城市空气环境，做苦行僧式的跋涉。在多次的志愿者活动、现场调研活动中，我们深深地感受到北京市民对于自行车的依恋，对于舒适、便捷、安全的城市交通环境的渴望。从环保、经济、文化等多角度考量，发展北京市自行车交通并不是低碳符号下的作秀行为，而是“宜居城市”未来健康、可持续发展的必要理性选择。

自行车交通对城市环境改善的积极意义

从环境保护的角度来说，各种出行方式按照能源消耗量从小到大排序，依次为步行、自行车、地铁、公共汽车（铰链车）、普通公共汽车、摩托车、小汽车。自行车是除步行之外，最低碳节能的出行方式。

据统计，欧盟的能源消耗和碳排放总量中，交通占据第二位。而支持城市人口流动所消耗的能源占据了40%的陆地交通排放总量及近70%的其他污染物排放总量。而在城市的日常交通出行中，绝大部分的距离都在5公里以内，这些出行都有可能由公共交通、自行车和步行的组合方案来代替。适当推广自行车出行，将大大降低城市交通的能耗和碳排放，并对城市的空气质量改善和人居环境质量提升有非常积极的作用。

自行车交通是北京的治堵良方

自行车具有简单、灵活的优势，具备步行无法奢望的速度优势，在近距离的出行过程中，具有快速、准时的优势，是5公里以内

表1 汽车与自行车客运交通使用道路面积效率比较

交通方式	平均车速	平均载客人数（人/辆）	动态占道面积（平方米/车）	平均占道面积（平方米/人）	道路面积效率
公交客运	25.0	25	125.42	5.01	1.0
小汽车	45.0	1.5	152.25	101.5	0.09
自行车	12	1.0	7.0	7.0	0.35

（资料来源：朱敏，邹南昌，改善天津市区自行车交通的思考与建议，城市交通，2002.03，pp23-30）

交通出行的最佳交通工具。而且，自行车交通人均占用的道路资源远小于小汽车，略大于公共汽车（表1）。

另外，推行自行车出行，可适当缓解因北京的道路网密度过低引起的交通拥堵。根据2005年统计数据，北京与东京的对比：北京道路网密度为2.98公里/平方公里，东京为18.74公里/平方公里；快速路长度北京为232公里，东京为191公里；平均路宽北京为18.7米，东京为8.5米。由此可见，北京的道路网密度极低，而且主要的道路资源都集中在宽阔的城市快速路。由于北京旧城历史风貌的保护、机关大院围合的限制，北京城市加密道路网的难度很大。若不改变现有的市民出行方式，北京治堵将无药可解。而灵活又占用极少道路资源的自行车出行，可以使用不利于行车的窄小胡同、支路，使之成为疏散城市交通流的毛细血管。推动自行车出行，不失为北京市治堵的一剂良方。

自行车交通有助于商业活力、街区文化的复兴

现代城市的交通需求远不只是承载人口和物质流动的简单命题，它同时还应该体现节能减排、环境友好、人体健康、生活方式、社区文化等综合功能。在西方发达国家，小汽车交通的普及导致了城市结构和功能发生了重大变化，如何改变原有的交通出行模式，复兴原有的城市活力、人性尺度是当今西方城市规划界的热门话题。而北京正走在过去西方城市所经历的老路上，我们看到北京的马路越修越宽，为了保障机动车的行驶通畅，不少地方用栏杆将机动车道、非机动车道、人行道隔离开来。这样一来，街道就成为了一个单一交通功能的通道，割裂城市空间的鸿沟，因而失去了传统城市街道原有的商业活力和公共空间的积极作用。小汽车的迅猛发展，也催生了更多适应小汽车的城市空间，例如，城市郊区的大型卖场、汽车影院等。若不从政策上加以控制，会加剧城市空间的扩张、公共空间的割裂，让市民对小汽车的依赖加重，成为公众不得不进行的选择。城市慢行系统将带动城市商业活力、街区文化的复兴，鼓励城市紧凑型发展，这对建设“宜居城市”，保护北京历史风貌和本土文化将起到积极的作用。

自行车交通是社会公平不可忽视的部分

传统交通规划的目的是提高流动性，经研究证明，市民出行时间并不会因为流动性的提高而减少，而是进一步增加了其出行距离，因而加剧了能源消耗、城市规模的蔓延等问题。而这种单一机械化提高机动车流动性的发展思路，在操作中会挤占相对弱势的自行车和步行交通空间，带来一系列的连锁反应，让城市环境恶化。目前北京的私家车拥有率约为30%，没有小汽车的人口仍占大多数，他们的日常交通需求主要依赖公共交通和非机动车交通。这些占人口大多数的无车族，在路权上却处于绝对的弱势地位，他们遭受着车辆噪音、污染和安全的风险，从社会公平的角度而言，弱势的大部分人的出行需求和安全也应该得到足够的重视。

城市可持续交通体系的发展，应该提倡交通方式的多样化。一方面，应该尊重快速的、慢速的、个体的、半公共的和公共的、机动的和非机动的，各种交通出行方式在城市中共存的权利，不应

该为了某一种出行方式的便捷而侵害和挤占其他出行方式。另一方面，也要重视多种交通方式的自由结合和转换的便捷，让市民可以根据其爱好、出行距离、身体状况、天气情况、时间段自由选择适宜的出行方式，享受美好的城市出行环境。

自行车出行：想说爱你不容易

尽管自行车出行在城市低碳交通、拥堵治理、街道文化重建、空气质量改善、维持社会公平等方面具有种种优势，但是今天北京市民的自行车出行却面临着诸多困难。自行车出行，想说爱你真的不容易！

哥本哈根气候会议之后，“自然之友”更加认识到本土民间组织对低碳行动的责任。从2010年地球日开始，动员志愿者与东华门街道、南池子社区共同完成了第一次调研。并且对自行车租赁系统在低碳出行与公共交通系统中的潜在角色与改善空间进行了初步探讨，推动了北京市民在改善自行车出行政策和实践中的公共参与。结合问卷访谈与实地探访，发动志愿者就北京5条主要地铁沿线的自行车租赁、存放、维修点、周边道路环境等进行了深入的调查，希望建立公众参与城市慢行交通系统建设的民间渠道。经过十个月的实地调查和问卷访谈，我们认为北京自行车出行目前面临六方面的问题，让越来越多的市民被迫或主动放弃自行车出行。

长距离交通之苦

随着北京城市规模的不断扩大，市民工作和居住地点的平均距离越来越大、通勤时间越来越长。完全依靠自行车上下班，对于很多通勤距离长的市民来说，是个并不现实的问题。对于出行距离10公里以上的情况，我们提倡的不是全程自行车通勤，而是希望将自行车作为公共交通系统的一个组成部分，与地铁、公交等机动公共交通接驳，完成出行的最后1~3公里距离。

缺乏自行车相关设施

在不少城市建设的新区，富丽堂皇的会堂、剧场、高档写字楼群，规划设计时就完全将自行车排除在外，没有自行车道，也没有停车位。不少写字楼的白领抱怨，小汽车有大片大片的停车场，却没有一间小小的自行车停车位。这些情况不仅妨碍了自行车出行，也向公众传达很负面的信息。

另外，自行车存车、修车、信息服务等相关配套服务及设施，也因为骑车人的缩减，面临着工作条件简陋、从业人员老龄化、收入微薄等困境。存车难、修车难等问题也在很大程度上阻碍了市民的自行车出行。

骑行安全没有保障

不少市民感叹现在大街上骑车实在是越来越危险了，重要原因在于近些年北京市机动车数量急剧膨胀，在自行车交通未受重视和保护的情况下，越来越多的自行车道被机动车道和路边停车位所占用。2010年“自然之友”对自行车道现状的调查显示，地铁二号线和地铁四号线南段沿线77%的路段上出现了自行车道被机动车占用的现象，50%的路段上出现了公交站台设在自行车道上的情形。骑车人被迫在小汽车和公交车之间穿行，其危险程度不言而喻（图1、



图1 自行车道被靠边停车的小汽车占据，自行车被迫与机动车争车道，加剧交通拥堵



图2 靠站的大公共汽车，将骑车人挤上机动车道，非常危险

图2、图3)。

另外，由于道路断面和路口设计的不够合理、道路标识不清晰，很多自行车道看似很宽，却频频与路边停车进出车辆或路口拐弯车辆互相干扰，小汽车主对相对弱势的自行车和行人也没有谦让的意识。但是乐观地说，北京道路较宽，不少主要道路在设计之初也考虑了自行车道，要提供安全、连续的自行车道，不少地方稍加改造、加强管理即可实现，但是设计必须细致化、人性化，才能让市民觉得好用、爱用。

自行车无处停放，被盗严重

缺乏足够的自行车停车空间和设施，是造成自行车胡乱停放的主要原因，也是影响自行车出行的一大掣肘。在现场调查中，我们发现相当部分的地铁站、公交车站缺乏停车位或车位不足，随意停放的自行车对人行道也造成了堵塞。此外，由于缺乏完善的管理设施，自行车的失窃问题一直是个“老大难”，市民普遍不敢买新车而使用功能差、不美观的旧车，使自行车出行成为一个“将就凑合”的权益之计，大批市民因此被迫放弃自行车（图4）。

道路空气质量差

北京本身地势平坦，大部分季节风力不大，是比较适合自行车出行的城市。但是，城市自然环境的恶化、大量机动车尾气的排放让道路空气质量变差，尤其拥堵现象的严重让道路空气质量更加恶劣。不少市民担心在这样的路上骑车，会对健康造成损害，因而放弃了自行车出行。若未来自行车出行增加，机动车出行减少，则将大大改善空气质量；反之亦然。

对自行车的文化偏见

“领导坐专车，大款开小车，小款打出租，好单位有班车，最后只有穷学生和平常老百姓骑自行车了。”北京大学教授郑也夫曾这样风趣地总结北京市民的交通出行方式。在日益富裕的中国，私家车不仅仅是一件交通工具，还被赋予了诸多身份、地位象征的符号含义。在随处可见的汽车广告中，频频出现这样的关键词：自

由、逍遥、尊贵、奢华、荣耀、时尚等。很多人认为买不起车的人才骑自行车，或者认为买了车就意味着更有身份、生活档次更高。

自行车出行，路在何方？

“公共自行车”的发展

对于北京这种规模超大的城市，市民通勤交通距离远大于其他中小城市，采用自行车与地铁和公共汽车换乘的组合形式，更加符合实际。在巴黎、里昂、巴塞罗那等欧洲城市运行的公共自行车体系，就很好地实现了自行车与公交换乘接驳。步行和自行车出行形成的“城市慢行系统”是“公交优先系统”的毛细血管，慢行和公交相得益彰，才可能最终达成多种出行方式的有序平衡，私家车主才会主动选择公共交通。

在治理城市拥堵、提倡低碳出行的大背景下，“公共自行车”租赁系统在全国多个城市都开始快速发展。2008年奥运期间，北京的公共自行车租赁曾经历了一段蓬勃发展的时期，如雨后春笋般出现了贝科蓝图、方舟、永久、环球、自由鸟、龙骑天际、康多、佳盛阳光等多家自行车租赁公司。除了前文提到的北京自行车骑行环境的种种制约，公共自行车租赁的经营由于租赁网点少、无法真正实现通存通还、租赁性价比低、网点经营模式低效、租赁程序复杂、政府扶持力度不够等多方面的问题，随后公共自行车租赁陷入恶性循环，状况急转而下，时至今日基本上已经全军覆没（图5）。

据悉，北京市政府将再次启动公共自行车的租赁试点，“自然之友”计划联合多家学术、媒体机构共同开展国内外多个城市已有公共自行车系统的调查研究，从民间的视角为北京市推行公共自行车系统提供深入、细致的理论和实践参考，为政府决策建言献策。

自行车交通的推动需要多领域的共同合作

2007年，美国自行车协会组织的世界友好自行车城市评选的标准是五个“E”：Engineering，自行车停放点和专用道等市政建设；Encouragement，自行车出行的激励机制和具体的支持活动；evaluation and planning，考核评估与规划机制确保实施的效果；Education，教



图3 路边随意停靠的骑车，对骑车人造成很大困扰（照片来源：李波）

育推广和便民措施；Enforcement，执行和执法。

由此可见，要推动自行车出行、公共自行车的发展，并不是简单地向市民呼喊“低碳出行”的口号，放上自行车在那里，或者划出一条路给自行车这么简单的事情。必须是在统一共识的基础上，对自行车出行的意义有充分的重视、认同和尊重，各个领域一起来合作。

自行车出行的培育过程将涉及从技术到文化的多个层面：一是个人生活方式的改变、观念的改变、引导大众采取更加可持续的出行方式；二是城市规划工作者，需要提供相关的技术支撑手段和城市空间环境；三是政府决策和管理部门，需要提供强有力的政策支持和细致的道路管理。只有社会各界携手，直面自行车出行所遭遇的以上种种现实问题，切实地复兴自行车文化，改善自行车的出行环境，维护自行车的路权，合理高效地经营公共自行车，使自行车出行成为市民主动、乐意的选择，这样才能真正的建立起城市慢行系统，实现城市交通可持续发展。

“自然之友”未来的努力

“自然之友”作为民间环保组织，关注自行车交通发展，有自己的优势和责任。好的城市是属于市民的城市，对于牵涉到每个人日常生活的交通出行问题，有着切身体验的市民最有发言权。自行车出行的道路改善问题和社区自行车文化再创造的问题涉及到千家万户的支持和参与。“自然之友”希望发挥民间环保组织灵活、易于和公众互动等优势，在政策的实施和公众的参与之间架起一座沟通与合作的桥梁。就自行车交通问题，近期将以“公众参与”为主要手段，努力推动城市慢行交通系统的建设、倡导自行车出行文化、促进改善自行车道路环境。

第一，推动城市慢行交通系统的建设。与社区合作，结合社区居民同画自行车“绿地图”的环境教育活动，将日常出行与社区本地文化、生态认知结合，动员本地居民参与社区慢行交通环境的改善，解决小汽车停车与步行、自行车出行环境的现实矛盾。在公




图4 五道口城铁站停放混乱的自行车，阻挡了无障碍通道（照片来源：简格民）



图5 原来曾经一度红火的自行车租赁，如今踪影难寻

共政策层面，通过开展关于“公共自行车”的调查研究，举行相关研讨会，让学者、公众、政府官员能够平等对话，促成“公共自行车”系统的良性运营。第二，倡导自行车出行文化。将继续开展系列自行车文化活动，通过电影、沙龙、讲座、展览、骑行等多种文化活动形式，传播自行车出行、低碳环保生活的理念，吸引更多的北京市民渐渐加入到关注、实践自行车出行的队伍中。第三，促进改善自行车道路环境。继续深入对北京市民出行方式、城市自行车道路环境现状的调查研究，通过各种公众活动的发起，使社会各界共同关注、共同探讨自行车出行的种种问题的出路。

我们相信，如果能够在自行车交通这类城市公共事务的决策和管理中，真正实现公众参与，允许和鼓励公众参与自行车交通相关政策的知情、参与和监督，落实每位市民低碳出行的切实行动，就能更好地实现北京的可持续发展，让北京成为真正的“宜居城市”“低碳城市”。

（注：“自然之友”成立于1994年3月31日，经过十几年的发展已从早期单纯关注环境教育与野生动物保护，逐渐发展成为集环境教育、政策倡导、公众参与、重大议题调研于一体的全国性、综合性、会员制环境保护结构，成为中国具有良好公信力和影响力的环境NGO。十几年来，“自然之友”累计发展会员一万余人，团体会员近30家，由“自然之友”会员发起创办的NGO已十余家。累计获得国内外各类奖项几十项，包括“亚洲环境奖”“地球奖”“大熊猫奖”、菲律宾“雷蒙·麦格赛赛奖”“壹基金典范工程”等。）

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