

22 N.Y.3d 762 (2014)

9 N.E.3d 884

986 N.Y.S.2d 389

**BRENDA CORNELL, Respondent,****v.****360 WEST 51ST STREET REALTY, LLC, et al., Defendants, and****360 WEST 51ST STREET CORP., Appellant.**

No. 16

**Court of Appeals of New York.**

Argued January 14, 2014.

Decided March 27, 2014.

764 \*764 Bonner Kiernan Trebach & Crociata LLP, New York City (Mindy L. Jayne and Alan L. Korzen of counsel), for appellant.

Gallet Dreyer & Berkey, LLP, New York City (Morrell I. Berkowitz and Joseph V Aulicino of counsel), for respondent.

765 \*765 Schechter & Brucker, PC., New York City (Thomas V Juneau, Jr., of counsel), for Council of New York Cooperatives & Condominiums, amicus curiae.

Judges GRAFFEO, SMITH and RIVERA concur with Judge READ; Judge PIGOTT dissents and votes to affirm in an opinion in which Chief Judge LIPPMAN concurs; Judge ABDUS-SALAAM taking no part.

## OPINION OF THE COURT

READ, J.

For the reasons that follow, we conclude that plaintiff Brenda **Cornell (Cornell)** did not raise a triable issue of fact to rebut the prima facie showing made by defendant **360 West 51st Street Corp. (51st Street Corporation or the corporation)** that her claimed personal injuries were not caused by indoor exposure to dampness and mold. Accordingly, Supreme Court properly granted the corporation's cross motion for summary judgment to dismiss **Cornell's** complaint in its entirety.

I

### The Complaint

With the exception of a nearly two-year gap, **Cornell** resided in a first-floor apartment in the building at **360 West 51st Street** in Manhattan from September 1997 until she vacated the premises on or about October 7, 2003. The corporation owned the building during **Cornell's** occupancy until September 5, 2003, when **360 West 51st Street Realty, LLC** (the landlord) acquired the property by bargain and sale deed and took possession.

766 \*766 By summons with notice dated September 10 and a complaint dated November 16, 2004, **Cornell** brought a personal injury action against **51st Street Corporation**, the landlord and other parties associated with the management of the building. In her complaint and amended complaint dated October 2, 2007, **Cornell** alleged that throughout her occupancy the building's "basement... was in a wet, damp, musty condition"; that the radiator in her apartment's living room "leaked on numerous occasions" and "continued to leak and also released steam into the Apartment" despite **51st**

Street Corporation's "attempt[s]" at repair; that in July 2003 she first noticed and notified **51st** Street Corporation that "there was mold growing in the [apartment's] bathroom," but the corporation "ignored" this condition; and that beginning in the first week of October 2003, the landlord and/or its contractor performed "demolition and/or construction [work] in the basement of the Building ..., permitting noxious dust, dirt, mold and debris to be released," which infiltrated her first-floor apartment.<sup>[1]</sup>

**Cornell** claimed that "[i]mmediately after" the landlord and/or its contractor performed the work in the basement,

"she became dizzy, disoriented, covered with rashes, unable to breathe, light-headed, congested, experienced tightness in her chest, had severe headaches, had shortness of breath, had a metallic taste in her mouth, and experienced other physical symptoms."<sup>[2]</sup>

767 Consequently, on or about October 3, 2003 she notified the landlord that these symptoms prevented her from remaining in her apartment; that beginning on October 7, 2003, she was "unable to sleep in, occupy, or use [her apartment] or engage in any of her usual duties and activities and sustained a loss of \*767 quality and enjoyment of life"; that although she had previously been blessed with "excellent health," she was "sick, sore, lame, and disabled" after October 3, 2003;<sup>[3]</sup> and that on or about April 30, 2004, she surrendered possession of her apartment and the lease, and was "forced to discard virtually all of her personal property because it was contaminated by mold and other harmful substances."

Based on these allegations, **Cornell** pleaded causes of action for personal injuries and property damage, constructive eviction, attorneys' fees, breach of the covenant of quiet enjoyment and intentional infliction of emotional distress. She sought \$11.8 million in damages, primarily for her alleged health problems, and another \$10 million in punitive damages. The landlord and **51st** Street Corporation subsequently initiated a third-party action against the contractor who performed the construction and demolition work in the building's basement in the fall of 2003.

## II

### Summary Judgment

#### The Landlord's Motion and 51st Street Corporation's Cross Motion

768 On January 14, 2008, the landlord moved for summary judgment and partial summary judgment to dismiss all **Cornell's** claims and, importantly for this appeal, specifically sought to dismiss the complaint to the extent that **Cornell** alleged mold-induced personal injuries, arguing that she was unable to prove either that mold can cause the type of injuries that she alleged (general causation), or that mold in her apartment caused the \*768 specific injuries that she asserted (specific causation). The landlord also sought to preclude **Cornell's** experts from testifying on causation, or, alternatively, requested a *Frye* hearing on whether her theory of causation enjoyed general scientific acceptance. In support of these aspects of its motion, the landlord, in addition to numerous exhibits, submitted the affidavit of Dr. S. Michael Phillips.

On January 25, 2008, **51st** Street Corporation cross-moved for summary judgment to dismiss **Cornell's** claims. The corporation incorporated by reference and adopted the "factual and legal arguments, references, attachments and exhibits" submitted by the landlord to support its motion, the landlord's memorandum of law and Dr. Phillips's affidavit.

Dr. Phillips, a clinical immunologist with over 30 years of clinical and basic science experience in the fields of internal medicine, allergy and immunology, is also a Senior Scholar in Clinical Epidemiology at the University of Pennsylvania. He assessed **Cornell's** claim that "a significant portion of her physical and psychological problems is related to adverse reactions stemming from exposures to molds," and, after review of her medical records and the relevant science, opined with reasonable medical certainty that there was "no relationship between the medical problems experienced by Ms. **Cornell** and exposures to molds."

With respect to general causation, Dr. Phillips principally relied on the position paper of the American Academy of Allergy,

Asthma and Immunology (AAAAI) (see Robert K. Bush et al., *The Medical Effects of Mold Exposure*, 117 J Allergy & Clinical Immunology [No. 2] at 326 [2006]). The authors of this paper concluded that "[e]xposure to molds can cause human disease through several well-defined mechanisms" (*id.* at 326), including an immune response in allergic individuals (hypersensitivity pneumonitis), direct infection by an organism and ingestion of mycotoxins in large doses from spoiled or contaminated food. The authors added that

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"[f]or each of these [three] defined pathophysiologic mechanisms, there are scientifically documented mold-related human diseases that present with objective clinical evidence of disease. Recently, in contrast to these well-accepted mold-related diseases, a number of new mold-related illnesses have been hypothesized. This has become a particular issue in litigation that has arisen out of unproved assertions \*769 that exposure to indoor molds causes a variety of ill-defined illnesses. Many of these illnesses are characterized by the absence of objective evidence of disease and the lack of a defined pathology and are typically without specificity for the involved fungus-fungal product purported to cause the illness" (*id.* at 326).

Calling the AAAAI report "the current `state of the art' and widely accepted as authoritative," Dr. Phillips added that "[l]ess [than] 1% of the [Academy's] members ... questioned the report," and, in any event, "the criticisms did not in any way support the majority of [Cornell's] contentions." He then made the following points to show that, even *assuming* general causation, **Cornell** could not demonstrate specific causation; to wit,

1. Although **Cornell** alleged mold exposure, nothing in the record "substantiate[s] that there were elevated levels of molds in the [apartment] on several occasions." In fact, "[m]olds are ubiquitous." And although there are no "safe" or "toxic" limits for mold, the levels measured in **Cornell's** former apartment were "of expected level and distribution for any average home" when compared to sampling studies.

2. Many of **Cornell's** complained-of medical problems are common in the human population, regardless of indoor exposure to molds (e.g., headache, fatigue, cough, itchy eyes, rashes, stuffy noses); conversely, molds have never been shown to cause other physical and psychological problems that **Cornell** ascribes to indoor mold exposure (e.g., cognitive problems, seizures, depression).

3. **Cornell** claimed to have been exposed to toxic molds and mycotoxins, but it is generally accepted in the scientific community that mycotoxins cause disease through ingestion of contaminated food, and not through inhalation.

4. Many of **Cornell's** complained-of medical problems (e.g., allergies, asthma, sinusitis headache, muscle and joint pain, etc.) date back to her teenage years, long before the alleged mold exposure.

5. If mold caused **Cornell's** complained-of medical problems, her symptoms should have abated when she left the apartment. She states, however, that her physical status has not improved, and some of her medical records support this.

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6. It is "clearly ... not true" that there is no other logical explanation for **Cornell's** symptoms as many of them "can be ascribed to other diseases such as other allergies, vasomotor \*770 rhinitis, multiple chemical sensitivities, irritable bowel syndrome, GERD [gastroesophageal reflux disease], depression, anxiety, the use of drugs such as steroids and narcotics, multiple orthopedic issues, trauma, and psychosocial interactions."

7. Physical findings and laboratory data did not substantiate mold-related illness; specifically, there was no evidence of mold-induced disease on physical examination or by X rays of her chest and sinuses, **Cornell** has no mold allergies established by skin testing criteria (although skin tests revealed allergies to inhalants other than molds), and other tests showed no hypersensitivities to mold or significant response to toxic molds.

## Cornell's Motion

**Cornell** submitted papers on April 24, 2008, in opposition to the landlord's motion and the corporation's cross motion, and also moved for summary judgment. **Cornell** mainly relied on the affidavit of Dr. Eckardt Johanning to counter the claim that

she could not prove general or specific causation. Dr. Johanning, a doctor of environmental and occupational medicine who specializes in mold-related illness, made the following points in his affidavit:

1. He repeatedly faulted the landlord's conclusions on the ground they were based on the opinions of Dr. Phillips, a doctor with "no formal training or professional experience in the pertinent field," and "out of date" or "discredited" publications, whereas he had examined **Cornell** many times since he was "brought into consult at a very early stage at the onset of her condition, which was undeniably caused by exposure to *an unusual mixture of atypical microbial contaminants*" (emphasis added).

2. He criticized as "notably absent" any reference to Civil Court's conclusion, after a full trial at which he testified, that **Cornell** had "shown by a preponderance of the credible evidence that a combination of metallic dust and fungi existed in her apartment, [which] affected her health."<sup>[4]</sup>

771 \*771 3. He stated that "[c]ertain 'quantifications' for determining the adverse health consequences [of] dangerous unsanitary conditions may be misleading," and **Cornell** was "unquestionably exposed to unsanitary conditions."

4. He averred that it was his "position that the generally accepted and peer-reviewed literature supports the fact that exposure to damp buildings with excessive and atypical microbial (mold) contamination is recognized as a cause of respiratory health complaints and conditions such as asthma, rhino-sinusitis, bronchitis, allergy, infections and irritant-type reactions of the skin and mucous membranes," and attributed "discussion and lack of knowledge about the exact pathophysiological and biochemical mechanisms in humans and specific properties of microbial (i.e., mold) agents" to "limited environmental testing reports."

5. By way of example, he cited a report from 2003, which states that various mold by-products "*may* all have adverse effects to human[s]"; a report from 2001, stating that the *risk* of current asthma, allergic rhinitis, atopic dermatitis and, especially, the common cold, was higher in damp homes; a report from 2004 that "*there is sufficient evidence of associations* of building dampness and presence of mold in damp indoor environments with nasal and throat symptoms, wheeze, cough, and asthma symptoms in sensitized people[, and] *suggestive evidence of associations* with shortness of breath and development of asthma"; and a 2006 study stating that microbial agents in floor dust may be a good surrogate measure for dampness-related bioaerosol exposure (emphases added).

772 6. He asserted that two recent studies "should put to rest any doubt as to the sound medical bases" for **Cornell's** claims. First, he cited *Excess Dampness and Mold Growth in Homes: An Evidence-Based Review of the Aeroirritant Effect and its Potential Causes* (Andrew P. Hope, M.D., et al., 28 Allergy & Asthma Proc [No. 3] at 262 [May-June 2007]), which states that "epidemiological studies *support the link* between a damp indoor environment and mold growth with upper airway irritant symptoms. MVOCs [microbial volatile organic compounds]<sup>[5]</sup> are \*772 produced by indoor fungus, and based on available data, are the most likely candidate compounds as the cause of this aeroirritant effect" (*id.* at 269 [emphasis added]). The second study, *Hydrophilic Fungi and Ergosterol Associated with Respiratory Illness in a Water-Damaged Building* (Ju-Hyeong Park et al., 116 Env'tl Health Persp [No. 1] at 45 [Jan. 2008]), states that "mold levels in dust were *associated with* new-onset asthma in this damp indoor environment. Hydrophilic fungi and ergosterol as measures of fungal biomass may have promise as markers of *risk of building-related respiratory diseases* in damp indoor environments" (*id.* [emphases added]).

7. Governmental reports, guidelines and public health initiatives "consistently stat[e] ... that moisture/dampness, and mold exposure in indoor environments, are a *public health concern*, and advise precautions regarding exposure and handling of such contaminated building material because of the *various possible* adverse health effects" (emphases added).

8. He is "convinced to a degree of medical certainty that [his] repeated medical evaluations and tests, as well as the analysis and review of the science, are in agreement with the published peer-reviewed literature of independent scientists and clinicians."

9. He employs differential diagnosis "to assess the health effects of building dampness and mold exposure," and his use of this methodology has been "validated and affirmed" by a number of courts. In this case, he conducted many different

diagnostic tests, including a number of costly general and case-specific laboratory tests.

10. The AAAAI report particularly relied on by Dr. Phillips and another paper cited by the landlord should be "rejected" because their authors included doctors who had testified as defense experts in mold cases.

11. One of the members of the committee that compiled and authored a report cited by the landlord subsequently filed an affidavit on behalf of the plaintiffs in the *Fraser* litigation (discussed later) in which she stated that "the products of damp buildings are strongly associated with and are a cause of respiratory symptoms and illness," and also noted that worker protections are widely required for cleanup of mold-contaminated environments.

773 12. "[S]tudies have now shown that the clear effects on people's health from exposure to dampness and other unsanitary and unhealthy indoor conditions makes the significance of \*773 precise quantifiable measures irrelevant"; and "[i]t is now generally accepted ... that the best policy is to clean and [remedy] indoor dampness and mold situations, and protect the involved building occupants and workers."

13. "A number of recent studies and publications entirely refute the underpinnings upon which [the landlord] rel[ied]," including a 2005 study, which states that "[t]here is abundant documentation of the *association between* building dampness and mold and adverse health effects on occupants, but the [virtual] causal agents of the effects are still unclear"; a 2005 study, which states that it "contributes to the growing literature that water-damaged built [sic] environments can be *associated with work-related regulatory disease*"; and a 2006 report, which examined evidence of fungal-related illnesses and the unique aspects of mold exposure to children, and states that "[c]ause-and-effect relationships between fungal exposure and allergic disease, asthma, and hypersensitivity pneumonitis are consistently supported by epidemiologic studies" and "[i]ndoor dampness, by itself seems to be *associated with* increase[d] respiratory illness and symptoms" (emphases added).

14. Based on his differential diagnosis, he concluded that **Cornell** suffers from "bronchial-asthma, rhino-sinusitis, hypersensitivity reactions, and irritation reactions of the skin and mucous membranes, requiring medical care and intervention"<sup>[6]</sup> and "within a reasonable degree of medical certainty, the acute illnesses and serious complications that [**Cornell**] experienced in the summer of 2004, and thereafter, [were] caused by her preventable exposure to the unsanitary, unhygienic conditions which existed in her apartment."

### III

## Supreme Court's Decision

774 The landlord and **51st** Street Corporation argued that they had made a prima facie showing of entitlement to judgment as a matter of law by demonstrating that **Cornell** was unable to prove either that mold can cause the types of injuries that she alleged (general causation), or that mold in her former apartment caused her injuries (specific causation); and that, in response, **Cornell** had not come forward with proof sufficient to \*774 raise a triable issue of fact on general or specific causation. Supreme Court agreed, and by decision and order dated December 18, 2009, granted the landlord summary judgment to dismiss the causes of action in the complaint with exceptions not relevant to this appeal; dismissed the complaint against **51st** Street Corporation in its entirety; and denied **Cornell's** motion to the extent she sought judgment on the merits of her personal injury claim (26 Misc 3d 1211[A], 2009 NY Slip Op 52707[U] [Sup Ct, NY County 2009]).

## The Fraser Litigation

Both the landlord and the corporation relied heavily on the *Fraser* litigation in their motion papers, and in reaching its decision, Supreme Court evaluated their motions from the standpoint of *Fraser*. In that case, a married couple brought suit on behalf of themselves and their infant daughter against the owners of the cooperative apartment building where they formerly resided, alleging adverse health effects caused by exposure to damp and moldy conditions.<sup>[7]</sup>

The defendants successfully sought a *Frye* hearing to determine whether the plaintiffs' theory of general causation and the methodology they followed to measure the mold were generally accepted in the relevant scientific community. Dr. Johanning was the plaintiffs' key expert witness, and Dr. Phillips testified for the defendants.

After a 10-day hearing, encompassing more than 1,000 pages of testimony and the introduction of more than 70 scientific articles and books, the trial judge concluded that the *Fraser* plaintiffs did not carry their burden under *Frye* to show that "the community of allergists, immunologists, occupational and environmental health physicians and scientists accept their theory—that mold and/or damp indoor environments cause illness" (*Fraser v 301-52 Townhouse Corp.*, 13 Misc 3d 1217[A], 2006 NY Slip Op 51855[U], \*26 [Sup Ct, NY County 2006]). Further, \*775 she opined, even if the plaintiffs had been able to demonstrate general causation, they had not established specific causation.<sup>[8]</sup> Accordingly, the judge precluded the plaintiffs from introducing testimony that mold caused their health complaints, and dismissed their personal injury causes of action with prejudice, while severing other causes of action for further proceedings.

The plaintiffs moved to renew and reargue. In response, the trial judge emphasized that

"the *Frye* hearing only addressed causation of alleged physical injuries. The Decision made no determination regarding whether landlords are required to abate mold conditions in their properties, whether real property with a mold condition is habitable, or whether there is a public health risk where indoor mold is present. The issue in the *Frye* hearing was limited to whether the scientific community accepted plaintiffs' theory of *causation*, which is different from *risk* or *association*" (*Fraser v 301-52 Townhouse Corp.*, 2007 NY Slip Op 32086[U], \*2-3 [Sup Ct, NY County 2007]).

The plaintiffs again advocated that the scientific community generally accepts a cause-and-effect relationship between exposure to damp and moldy indoor spaces and the development of upper respiratory and allergic-type reactions because studies evidence an association between this exposure and such symptoms. Noting that even Dr. Johanning conceded, upon her questioning, that causation and association are not synonymous, the trial judge granted reargument and adhered to her \*776 original determination that the plaintiffs' theory of causation was not generally accepted in the scientific community.<sup>[9]</sup>

Additionally, the trial judge granted renewal on the basis of our intervening decision in *Parker v Mobil Oil Corp.* (7 NY3d 434 [2006]), where we "clarified rules for the foundation necessary to admit expert evidence, which are unrelated to the *Frye* standard." (2007 NY Slip Op 32086[U], \*12.) The plaintiffs attempted to prove specific causation through Dr. Johanning's use of differential diagnosis to conclude that the "plaintiffs' symptoms must have been caused by airborne mold and mold by-products." (*Id.* at \*13.) The judge noted, however, that Dr. Johanning reached this conclusion "without underlying proof of causation or strong association, without proof of mold allergies,<sup>[10]</sup> without reliable standards for measurement of airborne exposure, and without measurements of mold by-products." (*Id.*) Upon renewal, the judge therefore held that the defendants were entitled to summary judgment dismissing the plaintiffs' personal injury claims "for the *additional* reason that their expert's opinion lack[ed] sufficient foundation to prove specific causation" (*id.* at \*4 [emphasis added]).

On appeal, the Appellate Division affirmed, with two Justices dissenting (*Fraser v 301-52 Townhouse Corp.*, 57 AD3d 416 [1st Dept 2008], *appeal dismissed* 12 NY3d 847 [2009]). The court observed that

"[w]hile there is general agreement that indoor dampness and mold are associated with upper respiratory complaints, defendants' experts took the position, consistent with the literature they submitted, that the observed association between such conditions and such ailments is not strong enough to constitute evidence of a causal relationship. In other words, *association is not equivalent to causation*. In this regard, even [Dr. Johanning] testified that association is not the same concept as causation. Given that plaintiff[s] failed to demonstrate general acceptance of the notion that a causal \*777 relationship has been demonstrated between the conditions and ailments in question, Dr. Johanning's claim to have established causation ... by means of differential diagnosis is unavailing" (*id.* at 417-418 [internal quotations marks and citations omitted]).

Citing *Parker*, the Appellate Division pointed out that preclusion was called for whether the plaintiffs' theory of general causation was scrutinized under *Frye* or foundational principles applicable to the admissibility of all evidence. In that vein, the court "stress[ed]" that its ruling was based on the "scientific literature placed before [it] in the present record," and did not "set forth any general rule that dampness and mold can never be considered the cause of a disease, only that such causation [had] not been demonstrated by the evidence presented by" the Frasers (*id.* at 418 [emphasis added]). Again citing *Parker*, the Appellate Division added that, even assuming general causation, the plaintiffs could not prevail on their personal injury claims because their experts did not specify the threshold level of exposure to dampness or mold required to produce the injuries alleged, or offer a reliable measurement of the level of mold in their former apartment (*id.* at 419-420).

The dissenters' position is perhaps best summed up in their statement that

"[the Frasers] claim, and the literature confirms, that more than an outlying segment of the scientific community has concluded that there is evidence that building dampness and mold have *the potential* to cause allergic and irritative reaction in sensitized people. [They] simply seek an opportunity to prove to a jury that the dampness and mold in their apartment caused their symptoms" (*id.* at 432-433).

Further, the dissenters considered the differential diagnosis performed by Dr. Johanning to be "scientifically valid" (*id.* at 435).

## Supreme Court's Reasoning

778 The trial judge used the *Fraser* litigation as a frame of reference for analysis since, as in this case, *Fraser* involved allegations that respiratory symptoms and rashes were caused by indoor exposure to mold and dampness; Dr. Johanning was the main plaintiff's expert in both cases; and his opinion was essentially the same—i.e., in *Fraser*, that the plaintiffs' illnesses \*778 were caused by exposure to "excessive and atypical microbiological contamination"; and here, that **Cornell's** virtually identical claimed illnesses were attributable to "an unusual mixture of atypical microbial contaminants." (26 Misc 3d 1211[A], 2009 NY Slip Op 52707[U], \*2.) Accordingly, the judge reviewed whether, or to what extent, Dr. Johanning had updated the epidemiological evidence that he reviewed when formulating his opinion on general causation in *Fraser*.

The trial judge related that Dr. Johanning cited only two additional studies, both postdating the record in *Fraser*, but that these studies "[did] not reflect a material change in scientific opinion on the issue of general causation." (*Id.* at \*3.) Consequently, since the Appellate Division in *Fraser* "found that the epidemiological evidence on which Dr. Johanning relied was not sufficiently strong to permit a finding of general causation, and as the limited supplemental studies that [were] submitted in this action plainly [did] not remedy [this] insufficiency," the judge considered herself "constrained to hold that [**Cornell** was] unable to prove general causation." (*Id.* at \*6.)

The trial judge also concluded that **Cornell**, like the plaintiffs in *Fraser*, could not prove specific causation because she did not identify the specific type of molds or toxins that allegedly adversely affected her, and did not quantify her exposure. Further, she noted that in *Fraser* the Appellate Division rejected Dr. Johanning's use of differential diagnosis as a substitute for quantitative proof.

While acknowledging that the *Fraser* decision by no means foreclosed a future determination that dampness and mold cause disease, the trial judge decided that *Fraser* nonetheless mandated dismissal of **Cornell's** personal injury claims because

"[t]he circumstances in *Fraser*—plaintiffs claiming upper respiratory symptoms, asthmatic symptoms, and allergic reactions, based on an undifferentiated mixture of microbial contaminants—are substantially the same as the circumstances in [this] case. The scientific theory advanced in *Fraser* is the same theory advanced here, by the same witness, Dr. Johanning, on the basis of largely the same scientific evidence." (*Id.* at \*7.)

For these reasons, Supreme Court dismissed all of **Cornell's** causes of action except those for property damage and  
779 breach of the covenant of quiet enjoyment as against the landlord and the \*779 contractor. Soon after this ruling, **Cornell** settled her lawsuit against these parties; she appealed the judge's decision in favor of **51st** Street Corporation.

## IV

### The Appellate Division's Decision

On March 6, 2012, the Appellate Division, with one Justice dissenting, reversed the motion court's order and reinstated the complaint as against **51st** Street Corporation (95 AD3d 50 [1st Dept 2012]). The court faulted the lower court for improperly interpreting *Fraser* "as setting forth a categorical rule requiring dismissal of [**Cornell's**] toxic mold claim due to failure [to] meet the standard of scientific reliability set forth in" *Frye* (*id.* at 52). Emphasizing that *Fraser* had simply found that the plaintiffs in that particular case had failed to raise any triable issues of fact, the Appellate Division concluded that here, Supreme Court "erred in finding that [**Cornell's**] proof was not strong enough to constitute a causal relationship, or that the methodologies used to evaluate her condition failed to meet the *Frye* standard" (*id.* [internal quotation marks omitted]).

The Appellate Division then held that "[s]ince [**Cornell's**] expert's opinions relating [**Cornell's**] condition to the mold infestation find `some support in existing data, studies [and] literature,' ... the *Frye* standard is satisfied" (*id.* at 53 [emphasis added and citations omitted]). The court reviewed three of the submissions relied upon by Dr. Johanning (one of the studies included in the *Fraser* record, and the two "supplemental" studies), then opined that "[t]he scientific evidence shows that exposure to molds, particularly the types of molds whose presence in plaintiff's apartment was confirmed by sampling ... can cause the types of ill effects experienced by [**Cornell**]" (*id.* at 58). The court further held that neither *Fraser* nor any other case had rejected differential diagnosis as a means of determining the source of a patient's illness so long as the accused agent was capable of causing the alleged injuries.

The Appellate Division also faulted the trial judge for ruling that differential diagnosis, as undertaken by Dr. Johanning in this case, was insufficient to establish specific causation. The court's decision in this regard seems to reflect the view that because "[i]t is undisputed that exposure to toxic molds is capable of causing the types of ailments from which [**Cornell**] suffers," *Parker* teaches that threshold and actual exposure levels are not required to perform differential diagnosis (*id.* at 60).

780 \*780 The dissenting Justice criticized the majority for disregarding *Frye's* requirement that "the reliability of a new test, process, or theory [must] be `generally accepted' within the relevant scientific community" (*id.* at 63 [Catterson, J., dissenting]). He concluded that while Dr. Johanning may have demonstrated that there was scientific evidence that mold caused **Cornell's** injuries, his affidavit fell short of establishing *Frye's* "essential requirement"—i.e., general acceptance of his theory within the relevant scientific community (*id.*). And like Supreme Court, he was of the view that the two "supplemental" studies did not bear out general acceptance of a causal connection between mold exposure and **Cornell's** professed injuries (*id.* at 63-64).

On October 2, 2012, the Appellate Division granted **51st** Street Corporation leave to appeal and certified the following question to us: "Was the order of [the Appellate Division], which modified the order of the Supreme Court[,], properly made?"

## V

### Discussion

In *Frye v United States* (293 F 1013, 1014 [DC Cir 1923]), the court rejected the testimony of a defense expert regarding the results of a "systolic blood pressure deception test"—an early type of polygraph test—because it had not yet "gained

such standing and scientific recognition among physiological and psychological authorities as would justify the courts in admitting expert testimony deduced from the discovery, development, and experiments thus far made." While the *Frye* test turns on acceptance by the relevant scientific community, we have never insisted that the particular procedure be "unanimously indorsed" by scientists rather than "generally acceptable as reliable" (see *People v Wesley*, 83 NY2d 417, 423 [1994], quoting *People v Middleton*, 54 NY2d 42, 49 [1981]).<sup>[11]</sup>

781 *Frye* focuses on principles and methodology, but these are "not entirely distinct from one another" (see *General Electric Co. v Joiner*, 522 US 136, 146 [1997]). Thus, even though the expert is using reliable principles and methods and is extrapolating from reliable data, a court may exclude the expert's opinion if "there is simply too great an analytical gap between the data and the opinion proffered" (*id.* [observing that nothing in *Daubert* or the Federal Rules of Evidence requires a district court "to admit opinion evidence that is connected to existing data only by the *ipse dixit* of the expert"]; see also *Marso v Novak*, 42 AD3d 377, 378 [1st Dept 2007] [remarking that a "methodology-only, ignore-the-conclusion" approach would circumvent the rationale for the *Frye* doctrine]). We have sometimes expressed this precept in terms of the general foundation inquiry applicable to all evidence (see *Wesley*, 83 NY2d at 422; *Parker*, 7 NY3d at 447). And in the social science arena, we have measured the reliability of novel hypotheses and theories—not just methodologies—against the *Frye* standard (see e.g. *People v Taylor*, 75 NY2d 277 [1990] [concluding that rape trauma syndrome is generally accepted as reliable within the relevant scientific community]; *People v LeGrand*, 8 NY3d 449 [2007] [identifying three factors relating to eyewitness identifications, which are generally accepted as reliable within the relevant scientific community]).

Here, **51st Street Corporation** argues that the Appellate Division "improperly applied a modified version of the *Frye* test to deem [**Cornell's**] expert's testimony regarding general causation admissible." We agree. The corporation made a prima facie case that **Cornell** could not prove general causation. Dr. Phillips in his affidavit opined that it is generally accepted within the relevant community of scientists (i.e., allergists, immunologists, occupational and environmental health physicians) that exposure to mold causes human disease in three ways: an immune response in allergic individuals (hypersensitivity pneumonitis), direct infection by an organism (e.g., athlete's foot) and ingestion of mycotoxins (any toxic substance produced by a fungus) in large doses from spoiled food. He cited studies, and in particular, the AAAAI report, to support his depiction of the state of the science. And although **Cornell** claims to suffer from various \*782 respiratory illnesses, hypersensitivity pneumonitis is not one of them.<sup>[12]</sup>

With **51st Street Corporation** having made its prima facie showing, the burden then shifted to **Cornell** to raise a triable issue of fact with respect to general causation. Her expert, Dr. Johanning, sought to do this in three ways. First, he attacked Dr. Phillips's qualifications and the soundness of the scientific authorities undergirding his opinion on general causation. Dr. Johanning called Dr. Phillips unqualified because he was not a mold specialist. But Dr. Phillips is, by any measure, clearly competent to render an opinion about the possible adverse health effects in humans of indoor exposure to molds (see shorthand description of his credentials, *supra* at 768). Dr. Johanning also condemned the AAAAI report as "out of date" and "discredited." He did not, however, claim that the report has ever been withdrawn, or indicate where its conclusions were ever repudiated by the scientific community or have been superseded, or suggest that the AAAAI is not reputable.<sup>[13]</sup>

Second, Dr. Johanning quite accurately pointed out that government reports and public health initiatives treat mold in damp indoor environments as a public health concern, and public health agencies have issued guidelines and recommended precautions to safeguard against the risk of harm from indoor mold exposure. But this is irrelevant since "standards promulgated by regulatory agencies as protective measures are inadequate to demonstrate legal causation" (*Parker*, 7 NY3d at 450).

783 Finally, Dr. Johanning relied on various studies or reports in the record to support the proposition that his theory of general causation enjoyed general scientific acceptance; he portrayed the two reports that postdate the close of the record in *Fraser* as game changers (see *supra* at 771-772 [these reports "should \*783 put to rest any doubt as to the sound medical bases" for **Cornell's** personal injury claims]). But these more recent reports, like the others that Dr. Johanning commended to the lower courts' attention, speak in terms of "risk" and "linkage" and "association"—not causation. Indeed, Dr. Johanning repeatedly equated association with causation. In so doing, he departed from the generally accepted

methodology for evaluating epidemiologic evidence when determining whether exposure to an agent causes a harmful effect or disease.

As summarized in the federal courts' Reference Manual on Scientific Evidence:

"Epidemiologists are ultimately interested in whether a causal relationship exists between an agent and a disease. However, the first question an epidemiologist addresses is *whether an association exists* between exposure to the agent and disease. An association between exposure to an agent and disease exists when they occur together more frequently than one would expect by chance. *Although a causal relationship is one possible explanation for an observed association between an exposure and a disease, an association does not necessarily mean that there is a cause-effect relationship*" (Michael D. Green et al., Reference Guide on Epidemiology, in Federal Judicial Center, Reference Manual on Scientific Evidence at 566, Federal Judicial Center [3d ed 2011] [emphases added]).

Thus, studies that show an *association* between a damp and moldy indoor environment and the medical conditions that Dr. Johanning attributes to **Cornell's** exposure to mold (bronchial-asthma, rhino-sinusitis, hypersensitivity reactions and irritation reactions of the skin and mucous membranes) do not establish that the relevant scientific community generally accepts that molds *cause* these adverse health effects. But such studies necessarily furnish "some support" for causation since there can be no causation without an association (although, as explained, there can be an association without causation). For these reasons, the Appellate Division was incorrect when it ruled that the *Frye* standard was satisfied in this case because Dr. Johanning's opinions as to general causation find "some support" in the record. In sum, then, **Cornell** has not raised a triable issue of fact with respect to general causation.

784 Additionally, even *assuming* that **Cornell** demonstrated general causation, she did not show the necessary specific \*784 causation. As *Parker* explains, "an opinion on causation should set forth a plaintiff's exposure to a toxin, that the toxin is capable of causing the particular illness (general causation) and that plaintiff was *exposed to sufficient levels* of the toxin to cause the illness (specific causation)" (*Parker*, 7 NY3d at 448 [emphasis added]). *Parker* explains that "precise quantification" or a "dose-response relationship" or "an exact numerical value" is not required to make a showing of specific causation (*id.* at 448-449). *Parker* by no means, though, dispensed with a plaintiff's burden to establish sufficient exposure to a substance to cause the claimed adverse health effect (*see id.* at 449 [suggesting alternative ways to do this, such as estimating exposure by means of mathematical modeling]). As the Circuit Court of Appeals for the Eighth Circuit commented in *Wright v Willamette Indus., Inc.* (91 F3d 1105, 1107 [8th Cir 1996]),

"[a]ctions in tort for damages focus on the question of whether to transfer money from one individual to another, and under common-law principles ... that transfer can take place only if one individual proves, among other things, that it is more likely than not that another individual has caused him or her harm. It is therefore not enough for a plaintiff to show that a certain ... agent sometimes causes the kind of harm that he or she is complaining of. At a minimum,... there must be evidence from which the factfinder can conclude that the plaintiff was exposed to levels of that agent that are known to cause the kind of harm that the plaintiff claims to have suffered."

Here, Dr. Johanning did not identify the specific disease-causing agent to which **Cornell** was allegedly exposed other than to vaguely describe it as "an unusual mixture of atypical microbial contaminants." He made no effort to quantify her level of exposure to this "unusual mixture"; he simply asserted that "[c]ertain `quantifications' ... may be misleading," and that she was "unquestionably exposed to unsanitary conditions." He did not respond to, much less refute, Dr. Phillips's statement that the molds in **Cornell's** former apartment were "of expected level and distribution for any average home" when compared to sampling studies.

Next, Dr. Johanning claimed that he established specific causation through a differential diagnosis. Differential diagnosis is a generally accepted methodology by which a physician considers the known possible causes of a patient's symptoms, then, by utilizing diagnostic tests, eliminates causes from the list until \*785 the most likely cause remains. In short, differential diagnosis "requires physicians to both `rule in' and `rule out' the possible causes of the [patient's] symptoms through accepted scientific reasoning and diagnostic tests" (*Jazairi v Royal Oaks Apt. Assoc., L.P.*, 2005 WL 6750570, \*9,

2005 US Dist LEXIS 47915, \*30 [SD Ga 2005], *affd* 217 Fed Appx 895 [11th Cir 2007]). Differential diagnosis, of course, "assumes that general causation has been proven" (*Norris v Baxter Healthcare Corp.*, 397 F3d 878, 885 [10th Cir 2005]), quoting *Hall v Baxter Healthcare Corp.*, 947 F Supp 1387, 1413 [D Or 1996]; see also *Ruggiero v Warner-Lambert Co.*, 424 F3d 249, 254 [2d Cir 2005] ["Where an expert employs differential diagnosis to rule out other potential causes for the injury at issue, he must also rule in the suspected cause, and do so using scientifically valid methodology" (internal quotation marks and citation omitted)]).

First, the Appellate Division is incorrect to the extent that it suggests that performance of a differential diagnosis establishes that a plaintiff has been exposed to enough of an agent to prove specific causation. This is not what we meant when we stated that "precise quantification" of exposure was not necessary, and there exist alternative "potentially acceptable ways to demonstrate [specific] causation" (*Parker*, 7 NY3d at 448, 449). In any event, this record does not supply a proper foundation for Dr. Johanning's differential diagnosis.

As Dr. Phillips attested, many of the medical conditions that **Cornell** attributes to her mold exposure (e.g., asthmatic symptoms) are common in the general population; additionally, many of her symptoms may be ascribed to non-mold-related diseases. Yet, Dr. Johanning does not explain what other possible causes he ruled out or in, much less why he did so. He states that he performed a panoply of diagnostic tests, but does not give any results. Dr. Phillips, upon review of **Cornell's** medical records, stated that physical findings and laboratory data did not substantiate mold-related illness; for example, **Cornell** tested negative for mold allergies, but positive for other inhalation allergies. Dr. Johanning does not dispute this, or explain how any of the diagnostic findings are consistent with his differential diagnosis. Instead, he broadly states his conclusion that **Cornell's** medical problems are mold-induced, based on differential diagnosis.

786 Finally, we underscore (as did the Appellate Division in *Fraser*) that a *Frye* ruling on lack of general causation hinges on the scientific literature in the record before the trial court in the particular case. Here, that record was complete more than six \*786 years ago. Meanwhile, scientific understanding, unlike a trial record, is not by its nature static; the scientific consensus prevailing at the time of the *Frye* hearing in a particular case may or may not endure. As a result, this case does not (and indeed cannot) stand for the proposition that a cause-and-effect relationship does not exist between exposure to indoor dampness and mold and the kinds of injuries that **Cornell** alleged. Rather, **Cornell** simply did not demonstrate such a relationship on this record.

Accordingly, the order of the Appellate Division should be reversed, with costs; defendant **360 West 51st Street Corporation's** motion for summary judgment dismissing the complaint against it granted; and the certified question answered in the negative.<sup>[14]</sup>

PIGOTT, J. (dissenting).

I respectfully dissent because, in my view, questions of fact exist as to whether plaintiff's injuries were caused by her exposure to mold. In *Parker v Mobil Oil Corp.* (7 NY3d 434 [2006]), we held that "an opinion on causation should set forth a plaintiff's exposure to a toxin, that the toxin is capable of causing the particular illness (general causation) and that plaintiff was exposed to sufficient levels of the toxin to cause the illness (specific causation)" (*id.* at 448).

787 Plaintiff alleges that she was exposed to mold after construction work was performed in the basement of her apartment building. There is no dispute that mold is capable of causing some of plaintiff's alleged ailments. Defendant's own expert conceded that it is generally accepted that "molds can cause a wide spectrum of illnesses, including allergies, irritation, hypersensitivity pneumonitis, and direct infection." Although the majority takes issue with plaintiff's expert's reliance on studies that show only an *association* between a moldy environment and plaintiff's medical conditions, one study indicates that these associations are "consistent with a causal role" and another declares that "epidemiological studies support the link between a damp indoor environment and mold growth with upper airway irritant symptoms." Indeed, defendant's own expert utilizes the term "association" when discrediting plaintiff's claims: "If mold could cause her problems, then there should be valid epidemiologic studies documenting an association between mold and the signs and symptoms, which she experienced." \*787 Plaintiff has proffered such studies. Further, although the standards promulgated by regulatory agencies on mold removal are not dispositive of the issue, they need not be ignored.

As it pertains to "specific causation," plaintiff's expert personally examined plaintiff and performed a differential diagnosis, a method the majority agrees is generally accepted in the scientific community (majority op at 784).

In short, our *Frye* standard was developed primarily to throw out "junk science" or "novel theories." In this case, there is no dispute among the experts that there are causal links between exposure to mold and respiratory illness. The degree of that "association" and whether it is indicative of a "causal relationship" in this particular case, in my view, is a question of fact for the jury. Plaintiff should have her day in court to prove that mold from defendants' premises caused her symptoms.

Order reversed, with costs, defendant **360 West 51st Street Corp.**'s motion for summary judgment dismissing the complaint against it granted, and certified question answered in the negative.

[1] According to the landlord, in mid-September 2003, signs were posted in the building's lobby to notify residents that a cleanup project would be undertaken in the basement, beginning October 1st; that this project entailed the removal of materials left behind or discarded by the prior owner or tenants, and repainting the area; that the project was completed on October 5, 2003; and that the contractor promptly hauled away all debris. **Cornell's** experts theorized that the contractor disturbed years of accumulated mold spores and dust when performing this cleanup, and that these materials entered **Cornell's** apartment through cracks in the floor and a dumbwaiter shaft.

[2] In her verified bill of particulars, **Cornell** listed as her injuries "[e]nvironmental asthma, allergies and reflux; cognitive and memory issues; fatigue; lack of stamina; sinus and breathing problems; headaches and rashes; seizures." She further stated that she first experienced symptoms in July 2003, but only when in the bathroom; however, as of October 1, 2003, all the listed injuries became permanent, with the possible exception of the seizures.

[3] In her verified bill of particulars, **Cornell** alleged that as of September 30, 2003, she "was in excellent health and was an athlete, biking 150-200 miles per week," and "[u]ntil August 2003, [she] was employed in a responsible, demanding position in [an] IT department ... and maintained a part-time business producing music and as a DJ." But since October 1, 2003, **Cornell** averred, she had been

"unable to engage in any physical activity; [experiences] difficulty walking any distance, climbing stairs, carrying a bag, breathing, thinking, remembering; suffered a herniated disk in [the] neck, injuries to both elbows [and] exacerbated an existing right shoulder injury; suffered a new right hamstring injury; is required to eat an extremely limited diet and [is] unable to eat foods she previously enjoyed; [is] unable to engage in sexual activity; suffers from extreme fatigue; [and is] unable to work as a DJ or produce music or engage in any work other than low-level, low paid, rote work."

[4] After **Cornell** left the apartment in early October 2003, she stopped paying rent. She and the landlord were unable to work out a mutually agreeable accommodation, and the landlord eventually initiated a summary nonpayment proceeding in Civil Court, seeking the unpaid rent. **Cornell's** answer raised the affirmative defenses of constructive eviction and violation of the warranty of habitability, and she counterclaimed on those grounds in the amount of \$25,000. On August 16, 2005, after a several-months-long trial, the Civil Court judge found in **Cornell's** favor and awarded her judgment in the amount of \$17,050. The Appellate Term affirmed (see 360 W. 51st St. Realty, LLC v Cornell, 14 Misc 3d 90 [App Term, 1st Dept 2007], *lv denied* 2007 NY Slip Op 71525[U] [1st Dept 2007]). The corporation did not participate in this hearing.

[5] MVOCs are gases produced by molds, and are responsible for the earthy, musty odor associated with mold growth.

[6] This list of adverse health effects is considerably scaled back from the allegations in the complaint and the bill of particulars, which Dr. Phillips addressed in his affidavit.

[7] According to the trial judge in *Fraser*, the plaintiffs' mold-related health claims changed considerably over time. At first, they asserted cognitive deficits, infertility, asthma, headaches, cough, sore throat, fatigue, psychological injuries, itchy and swollen eyes, nasal congestion, asthmatic symptoms, upper respiratory infections and frequent cough and rashes. Eventually, their alleged health complaints boiled down to respiratory problems, rash and fatigue.

[8] In particular, the trial judge noted that the plaintiffs' apartment was never tested for the specific mold microbial by-products that their main expert, Dr. Johanning, testified were an irritant when released into ambient air. Further, evidence demonstrated that

"there are no standards for what amount of mold [is] excessive in terms of human health and the indoor environment; there are no generally accepted standards for measuring indoor airborne mold [or] for the acceptable amount of mold in indoor air; there are many types of mold, each [with] different or no health effects; there are no standard scientific definitions for 'dampness' or 'moisture'; skin prick tests for allergy, which were not done [in *Fraser*], were deemed the most reliable way to test for allergy by the literature [and by the plaintiffs' and the defendants' experts]; and the [allergy-related] test performed on [the parents]... did not show allergy to mold." (*Id.*)

[9] Upon reargument, the trial judge made a minor modification as to the reasoning in her original decision, which is not relevant for

present purposes.

[10] The Frasers apparently tested negative for mold allergies. The trial judge remarked that there was evidence that Ms. Fraser was allergic to dust mites and cats, and that the family lived with several pet cats.

[11] The *Frye* test's main competitor is the standard set out by the United States Supreme Court in *Daubert v Merrell Dow Pharmaceuticals, Inc.* (509 US 579 [1993]) to replace *Frye* in the federal courts. *Daubert*, which like *Frye* focuses on principles and methodology, calls upon a trial court to consider a nonexclusive list of four factors when assessing the evidentiary reliability of scientific evidence: (1) whether the theory or technique about which the expert is testifying can be tested; (2) whether the object of the testimony "has been subjected to peer review and publication"; (3) the known or potential error rate of the theory or technique; and (4) general acceptance in the relevant scientific community, which, although no longer the sole factor, "can yet have a bearing on the inquiry" (*id.* at 593-594).

[12] The Appellate Division stated that Dr. Phillips *agreed* with Dr. Johanning that "mold is capable of causing the ill-health effects experienced by [Cornell]" (95 AD3d at 61). This is clearly a misreading of Dr. Phillips's affidavit; he opined quite explicitly to the contrary.

[13] According to its website, the AAAAI is a professional organization with more than 6,700 members in the United States and 72 countries. Its members are allergists, immunologists, other medical specialists and allied health and related healthcare professionals, all with a special interest in the research and treatment of allergic and immunologic diseases. The AAAAI dates back to the early 1920s; its official journal, "The Journal of Allergy and Clinical Immunology," traces its roots to 1929, is published monthly and is the most-cited scientific journal in the field of allergy and clinical immunology (see <https://www.aaaai.org/home.aspx>).

[14] In light of our disposition of the case, we need not and do not reach the corporation's other arguments.

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